Metro Frameless Glass Systems

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Technical Manual – Edition 6



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FRAMELESS POOL FENCES, GATES AND WIND BREAK SCREENS

INTRODUCING METRO PERFORMANCE GLASS

Metro Performance Glass has established itself as a leading provider of frameless glass solutions in both the residential and commercial sectors. Metro's vision 'To be the leader in glass solutions', has become the driving force for the company and offers a level of reassurance to specifiers and installers that all products are compliant with Australasian building codes. Metro Performance Glass is at the forefront of providing high-performance glass and industryleading service to Australasian residential and commercial construction markets. We have an extensive network of four processing and fourteen distribution or retail sites across New Zealand. In addition, via our subsidiary Australian Glass Group, we operate two processing and distribution sites in Victoria, Tasmania and New South Wales.





We are Australasia's leading manufacturer and installer of double-glazed windows for both new residential and retrofit markets.

We also process annealed, toughened, laminated, painted and digitally printed glass products for applications ranging from mirrors, showers, balustrades and kitchen splashbacks to commercial facades. Our goal, be the leader in glass solutions – 'making lives brighter everyday'.



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FOREWORD

The Metro Frameless Glass (MFG) division was established late 2000 and is a market leader in the supply of fittings for an extensive range of frameless glass solutions.

Solutions:

Balustrades

- Stairwells
- Balconies
- Decks
- ▶ Pool Fence / Gates
- Windbreak Screens
- ▶ Handrails

Showers (Sliding, Screen & Pivot)

- ▶ Walk-in Showers
- Sliding Door Showers
- Glass Bath Screens
- ▶ Hinged Doors

Commercial Doors (Internal and External) – Pivot, Bifold & Sliding

- ▶ Sliding Door Systems
- ▶ Bifold / Stacking Door Systems

Hardware Options

- Handles / Latch sets and Level Locks
- Door Seals + Components

Frameless Partitions (Internal and External)

Structural Walls

Spider / Commercial Options (Facades)

- Commercial Facades
- Canopies / Strut Rods
- Architectural Door Pivots
- ▶ Glass Stair + Floor Tread System

Glass Fixing Standoffs

- ▶ Button Heads
- Counter Sunk Bushes
- Standoff Anchors
- Glass shelves



If your building or renovating don't overlook the potential of frameless glass systems to add beauty and comfort. With a range of high-tech systems MFG has an unsurpassed range of products ideally suited to enable uninterrupted views.

Convenience comes from the ability to find the right practical solution from a single source. Because of our experience, we can offer the best advice knowing that all of our systems are fully tested and engineered to meet exacting building codes and regulations. This means you and your customers can be reassured that all products are designed, tested and compliant with the required standards.

This manual will provide you with information about our products' structural and visual performance. We hope you find it easy to use. It is supported by continuously updated information available on the website www.metroglass.co.nz

For prompt personal assistance, you may call either your local MFG Stockist or our Metro Performance Glass Technical Support team.

"To add value to your next project, get in touch with the glass experts. The possibilities are limited only by your imagination".





MFG TECHNICAL SUPPORT

Metro Performance Glass Technical Team members are available during business hours for consultation about all aspects of your project. They can answer questions about the best product option or system for a particular job. product capabilities, size constraints and detailing queries.

You can contact our Technical team in the following ways:

- E-mail technical@metroglass.co.nz
- Website www.metroglass.co.nz
- Phone (09) 927 3000

The Metro Performance Glass Technical Department is accessible during standard work hours (8.00am-5.00pm

Installation details are hosted on metroglass.co.nz. Complete and comprehensive drawings and data specifications for each product are available. File formats for download include DWG and PDF.

estimates for glass, hardware or installation. Please contact your local branch for pricing estimates.

Local Assistance

Metro Frameless Glass Stockists have years of experience in assisting specifiers with design enquiries. Your local outlet can provide practical advice on technical issues involving product selection and installation and can also advise on product performance capability.

You can contact your local outlet by visiting the Metro Performance Glass website at www.metroglass.co.nz.

Simply click on the 'Find an Outlet' tab to find the contact details for your local Branch.

Product Specification Documents

Metro Performance Glass (MPG) have easy to use specification templates and tables available. These detailed specifications cover all aspects to ensure the correct product selection, supply and installation of Metro's systems and can easily be incorporated into any project specification. The documents are available for download at www.metroglass.co.nz or online from www.masterspec.co.nz.

Architects / Specifiers Manual

To request a hard copy of the Metro Frameless Glass Catalogue, simply register your details online via www.metroglass.co.nz or email: MFG@metroglass.co.nz.

The hard copy of the Architects / Specifiers Manual is only available to Architects, Architectural draughtsman, Building designers and Draughtsman engaged in the New Zealand building industry and living in New Zealand.



Register at www.metroglass.co.nz to download details.

The Metro Technical team are not able to provide quotes/

Updates

Due to continuous product development some information may have been updated since the time of publishing this manual. Metro Performance Glass reserves the right to amend specifications and make changes to products without prior notice and without incurring any obligation.

Metro Performance Glass accepts no responsibility for loss or consequential loss due to inaccuracies at the time of publishing or of subsequent changes made.

Metro Performance Glass will keep www.metroglass.co.nz updated.

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TESTING AND COMPLIANCE

Testing:

Metro Frameless Glass conduct a comprehensive testing program, utilising independent testing laboratories and/ or independent witnesses from experienced third-party consulting engineers.

Why Conduct Physical Testing?

Mandatory industry standards and regulations must be met for any barrier design before installation to prove the integrity/compliance of the balustrade system. As a balustrade is often an integral element intended to protect persons from various hazards, primarily safety from falling, it is imperative the specified system is within the design limits of the glass and hardware. Physical testing simulates real user scenarios & compliance is normally demonstrated by inspection and load/displacement testing of the barrier's structural elements and infill panels. Extensive physical testing is conducted to provide an ultimate assurance that the product selected is fit for purpose and exceeds the NZ Building Code requirements.

Types of Testing Conducted:

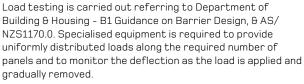
Barriers are required to resist a range of minimum "design loads" as specified in AS/NZS 1170.1:2002, Table 3.3 Minimum Imposed Actions for Barriers.



Uniformly distributed horizontal line load



Testing to destruction



Barrier testing/inspection would typically cover the following:

- Horizontal point load deflection.
- Horizontal line load deflection.
- Horizontal line load to failure.
- Balustrade system post failure testing:
 - deflection of rigid interlayer after single panel failure.
 - interlinking rail deflection after single glass panel failure. handrail deflection after single glass panel failure.
- Dimensional survey & condition assessment following each test.

Experience:

With over 20 years' expertise in glass design and balustrade ϑ handrail load testing, Metro's engineers have comprehensive practical experience in barrier system testing.

Our bespoke barrier load testing rig allows us to quickly load test any barrier to validate design calculations, demonstrate and confirm the safety and suitability of our barrier systems.



Post failure testing



Link Rail Testing

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PRODUCT COMPLIANCE

Overview of Producer Statements:

The producer statement system is intended to provide Building Consent Authorities (BCA's) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

There are two categories of producer statement, $\ensuremath{\textit{design}}$ and $\ensuremath{\textit{construction.}}$

Within the design category there are two types of statement issued; producer statement design and producer statement design review. These statements are issued by design professionals confirming that in their professional view, part, or all of the building work as described on nominated plans and specifications has been designed in accordance with the performance requirements of the NZBC. Note the design professional can be either the designer or a design reviewer.

- (a) Producer statement design (PS1) these statements are issued by design professionals as confirmation that the building work as designed and documented complies with the NZBC.
- (b) Producer statement design review (PS2) these statements are issued by design professionals who have reviewed the work of the designer (sometimes on behalf of the Council) as confirmation that the building work that they have reviewed complies with the NZBC.

Within the construction category, there are two types of statement issued; producer statement construction and producer statement construction review. These statements are issued by contractors or design professionals stating in their view that part, or all of the building work as described on the consented plans and specifications has been constructed and meets certain performance requirements of the NZBC and or conditions of building consent.

(c) Producer statement construction (PS3) this statement is issued by the contractor who has performed the building work as confirmation that the building work is in accordance with the consented plans and the NZBC and is issued when Council have had limited or no involvement with specific elements of construction, such as pile driving, application of waterproofing membranes, specialist coating and cladding systems, etc

(d) Producer statement construction review (PS4) this statement is issued by the design professional1 who has reviewed the work of the contractor as confirmation that the building work has been carried out in accordance with the consented plans and the NZBC and is issued where the design professional or Council has requested involvement or supervision by a suitably qualified person2 for building work, such as pile driving, compaction of fill, placement of steel, etc.

Producer Statements

All PS1's must be made specific to the project address with a cover sheet and relevant drawings (where required), marked up and included in the PS1.

MPG offer design tables and associated drawings to assist with sales & quoting. The documents are available for download at www.metroglass.co.nz or online from www.masterspec.co.nz.

To request a generic balustrade or pool fence PS1:

Metro Glass offer a range of "generic" balustrade system solutions.

PS1 documents for these systems can be requested from the design and technical centre within our website - www.metroglass.co.nz.

You will need to register your details and complete a balustrade or pool fence generic PS1 request (there is a guidance document within the website to assist in completing this process).

Please note: It is the responsibility of the designer to ensure that the design installation details exactly match the PS1 installation details.

Alternatively e-mail your project details to technical@ metroglass.co.nz and one of our team will assist with your balustrade or pool fence PS1 request.

To request a specific engineering design (SED) PS1:

Not all PS1 requests have "generic" solutions available at this time. Metro Glass has a team of experienced engineers dedicated to providing solutions for your glass and glazing projects.

You can request SED from the design and technical centre within our website - www.metroglass.co.nz. There are a selection of RFI forms which contain the minimum required details for and most common SED projects. Please submit the completed RFI form and required drawings to technical@metroglass.co.nz

Alternatively e-mail your project details to technical@metroglass.co.nz and one of our team will assist with your SED PS1 request. SED requests may incur engineering design and documentation fees.

Please Note:

A PS1 is not required for fully framed, partly framed or infill balustrade glazing protecting a fall of 1m or more, when the scope of the work complies EXACTLY with the terms of the latest amendment of B1 & NZS4222.3 amd 1, as per one of the tables in NZS4223.3 (table 7-12). Also ensure you comply with the 5m height above FFL requirements noted in NZS4223.1 amd 1, clause 3.8.3.2 (laminated glass that is prevented from disengaging from the perimeter frame when glazing more than 5m above an occupied space).

A PS1 is not required for fully framed or partly framed windbreaks that do NOT protect a fall of 1m or more. They shall be safety glass – Thickness in accordance with NZS4223 Part 4 (check wind) & NZS4223.3 amd 1, table 1 square metreage limitations apply. Point fixed wind breaks will require specific engineering design & enquiries for such should be requested via our website or emailed to technical@metroglass.co.nz

Ensure the proposed system is in the consented documents (or seek a building consent amendment) using our site specific PS1 **before** the system is installed.

Summary:

MPG PS1: MPG do not issue PS1s retrospectively. Site specific PS1s are required to be obtained from MPG prior to commencement of installation work.

MPG PS3 & MPG Installation: A PS3 can be issued to confirm glazing complies with the Building Code. MPG does not have to issue a PS1 or a design statement for a PS3 to be issued. However, when a PS1 (or other design documentation) has been issued, the installation and hence the PS3 must be in accordance with the issued PS1 (or other design documentation).

MPG PS3 & Third Party Installation: Where MPG do not undertake installation work, MPG will not issue a PS3. The PS3 will be the responsibility of the relevant third party undertaking installation who will need to certify compliance to the relevant PS1.









Balustrade Systems

Glass balustrades have the benefit of opening up and extending living areas, whilst ensuring safety barriers are in place for stairwells, mezzanine floors and upper storeys.

"Create large, open inner spaces that give homes a light, airy, spacious feel – without compromising on safety".







Balustrade Systems

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AREA	ICONS	KEY:
•		

POOL FENCE

BALUSTRADES

WINDBREAK



PRODUCT OVERVIEW

Balustrade Systems

1

Frameless glass balustrades are the least obtrusive fencing option available. They allow the eye to travel further without the interruption of your view, while still meeting safety and building standards. Metro Frameless Glass balustrade systems are designed for use in external balconies and stairs - as well as for internal stairs and landings, including windbreaks and pool fences.

Various fixing options are available to comply with the specifications and requirements of the building code using hardware that makes an architectural statement in itself. For further information, specific to Frameless Pool Fences, Gates or Windbreak applications see sections:

- Frameless Pool Fences / Gates (See section 7)
- ▶ Windbreaks (See section 7)

Balustrade Design Summary

Balustrade fixing is critical to ensure the performance of the glass as a barrier. There are a wide range of proprietary fixing systems and some standard techniques that are suitable. The designer and installer should be aware that if using a technique that is not supported by design or test data, the system may not comply with the NZBC.

There are several parts of the NZ Building Code (NZBC) that effect the design and installation of Balustrades and they are as follows;

- F2 Hazardous Materials
- F4 Safety from Falling
- B1 Structure
- B2 Durability
- D1 Access Routes
- E2 External Moisture

Complete guidance documents are available from Standards New Zealand, Ministry of Business, Innovation & Employment, 15 Stout Street, Wellington 6011.

P.O. Box 1473, Wellington 6140

Freephone: 0800 782 632 (New Zealand)

Phone: +64 3 943 4259

Email: enquiries@standards.govt.nz Business hours: 8.30am – 5pm Monday to Thursday;

9am – 5pm Friday

AN OVERVIEW:

F2 – Hazardous Building Materials Provides an acceptable solution and verification method for safe guarding people, protecting them from injury or illness citing NZS ZS 4223 Part 3 2016 as means of compliance.

 $\label{eq:F4-Safety from Falling} Provides an acceptable solution and verification method to confirm buildings are constructed to reduce the likelihood of accidental fall. It requires barriers where people could fall 1 metre or more.$

B1 – Structure Provides an acceptable solution and verification method to confirms buildings withstand likely loads, including wind, earthquake, live and dead loads (people and building contents).

This clause sets requirements around the combination of loads that buildings, building elements and site-work are likely to experience during construction, alteration and throughout their lives. The performance requirements outline how buildings should be stable, not degrade and withstand physical conditions to protect lives and other property. It makes due allowance for the intended use of a building, the consequence of failure and other limitations.

B2 – Durability defines minimum durability requirements for materials and fixings used in balustrades and barriers. The requirements range from 5, 15 to 50 years depending on whether the element is structural and how difficult it is to replace. In some cases, the 50-year requirement will apply to fixings for structural elements of safety barriers, but in most cases 15 years is adequate.

D1- Access Routes defines accessible routes and how handrails are used, but they are not required if it is not an accessible route.

E2 – External Moisture deal with balustrade to wall and deck drainage, junctions and balustrade fixing to ensure the building is water tight, and it also covers compatibility of materials.

Balustrade Summary (glazing safeguarding a fall)

- Balustrades, fences and screens that safeguard the occupants from falling 1000mm or more from the floor, deck, or balcony level are defined in NZS4223.3.2016 as a barrier. Such barriers shall meet the requirements of NZBC Clause F4, and resist the barrier actions from AS/NZS 1170.1 in accordance with Verification Method B1/VM1 of Clause B1.
- The glazing shall also meet the requirements of NZS 4223.4 or AS/NZS 1170.2 as applicable.
- Pool Fences shall also meet the requirements of NZS 8500 as applicable.
- Glass design shall be in accordance with NZS 4223: Parts 1, 3, and 4, Acceptable Solution B1/AS1, F2/AS1 and F4/AS1 with engineering design loads from B1/VM1 and AS/NZS 1170.
- Engineering may require Finite Element Analysis for glass specific design.
- Product prototype testing may be required to prove compliance, if the procedures in AS/NZS 1170 are not sufficient.

Durability Requirements of Nominated Building Elements:

Interpreting B2 with respect to glazed balustrade design

Building Element	Component	Situation/Function	Not less than 50 years	Not less than 15 years
Glazed safety barrier	Attached support posts, for both infill type and structural balustrades			Y
	Embedded support posts, for both infill type and structural balustrades		Y	
	Exposed cantilevered channels or clamps			Y
	Hidden or embedded cantilevered channels or clamps		Y	
	Fixings to building/structure	Screws, bolts, anchors, or similar attaching balustrade system to building or structure	Y	
Glass fixings	Bolts, or similar attaching glass to balustrade system			Y
	Balusters, and glass panels			Y
	Gaskets, sealant, and glazing beads	Moderately difficult to access or replace		Y



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Occupancy Types – Overview

There are seven core occupancy types that affect Barrier Loads:

RESIDENTIAL TYPES:

Α

- areas within a domestic or residential dwelling
- A (other)
 external balconies of domestic or residential dwelling

 C3
 areas for moving people and not susceptible to overcrowding

COMMERCIAL TYPES:

В, Е	office not susceptible to overcrowding
С3	areas for moving people and not susceptible to overcrowding
C1/C2	areas with tables or fixed seating adjacent to a balustrade
C5	areas susceptible to overcrowding
П	areas with tables or fixed seating adjacent to a

D areas with tables or fixed seating adjacent to a balustrade

APPENDIX D – GUIDANCE ON BARRIER LOADS (Informative) NZS 4223.3:2016 Table D1 – Barrier imposed actions

Type of	Specific uses	Тој	p edge and	rail	Inf	ill
occupancy for part of the building or structure		Horizontal kN/m	Vertical kN/m	Inwards, outwards, or downwards kN	Horizontal kPa	Any direction kN
A Domestic and residential activities	All areas within or serving exclusively one dwelling including stairs, landings and so on, but excluding external balconies and edges of roofs (see C3)	0.35	0.35	0.6	0.5	0.25
	Other residential (see also C)	0.75	0.75	0.6	1.0	0.5
B,E Offices and work areas not included	Light access stairs and gangways not more than 600mm	0.22	0.22	0.6	N/A	N/A
elsewhere including storage areas	Fixed platforms, walkways, stairways and ladders for access	0.35	0.35	0.6	N/A	N/A
	Areas not susceptible to overcrowding in office and institutional buildings also industrial and storage buildings	0.75	0.75	0.6	1.0	0.5
C Areas where p	people may congregat	e				
C1/C2 Areas with tables or fixed seating	Areas with fixed seating adjacent to a balustrade, restaurants, bars and so.	1.5	0.75	0.6	1.5	1.5
C3 Areas without obstacles for moving people and not susceptible to over- crowding	Stairs, landings, external balconies, edges of roofs and so on.	0.75	0.75	0.6	1.0	0.5
C5 Areas susceptible to over- crowding	Theatres, cinemas, grandstands, discotheques, bars, auditoria, shopping malls (see also D), assembly areas, studios and so on.	3.0	0.75	0.6	1.5	1.5
D Retail areas	All retail areas including public areas of banks/ building societies, (see C5 for areas where overcrowding may occur)	1.5	0.75	0.6	1.5	1.5
F/G Vehicular	Pedestrian areas in car parks including stairs, landings, ramps, edges of internal floors, footways, edges of roofs	1.5	0.75	0.6	1.5	1.5
appropriate b This usage (r a circular or square 3. under B,E) is for acce maintenance, and ser	ss to safe wo	rking at pla	-		

As per NZS 4223.3:2016. Please refer to standards New Zealand, Ministry of Business, Innovation & employment for actual guidance documents. The information provided is an overview only.

Determining Respective Wind Zones – A Useful Guide

When wind loads are applied to glass, it causes both compression and tensile stresses. The face of the glass that has the load imposed on it is subject to compressive stresses for which the glass has a high resistance. The opposite face has the tensile stresses applied to it for which glass has a lower resistance.

The majority of loads which glass has to withstand are caused by bending and probably the most important external factor, in specifying a suitable glass thickness is the design wind load. The actual design wind load can be determined by specific engineering design using NZS 4203 or AS/NZS 1170, and on large projects the project engineer should provide this information.

Typically, the loads will vary due to building height and glazing location with much higher loads on the corners of buildings and edges or roofs. For housing and low rise projects the wind loads can be determined from NZS 3604.

Defined Wind Zones NZS 3604:2011;

Low:	Wind speeds below 32 metres per second.
Medium:	37 metres per second
High:	44 metres per second
Very high:	50 metres per second
Extra high:	55 metres per second
Specific design (SD):	Over 55 metres per second

There are six steps to determining wind speed in New Zealand's building standards. These steps take into account the following factors:

- 1. Wind region: NZ has two 'wind regions', known as A and W. These are national averages based on MetService data.
- 2. Lee zones: Some parts of the country are in lee zones, which have higher wind speeds than either regions A or W.
- 3. Ground roughness: NZ homes are either in 'urban' or 'open' spaces, based on how built-up the area is. If there are more than 10 obstructions over 3 metres high (e.g. homes and trees) in a hectare, it will be classed as urban. The opposite applies to open areas. Therefore, even forested regions are technically urban when it comes to wind zoning.
- 4. Site exposure: Similar to roughness, exposure determines whether an area has nearby permanent shelter that is of similar size to the home being built. So, homes near beaches, open fields and similar will be classed as exposed.
- 5. Topographic class: Topographic class determines the topography of your site. It factors local geographical features (i.e. hills or escarpments), their steepness and where the build site is in respect to them.

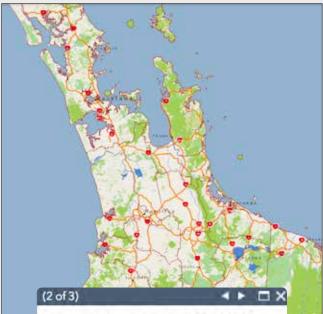
The **sixth step** would then be to calculate the final wind zone, and use these measurements to find the bracing requirement.



Example

A useful tool in determining respective zones, is available on the BRANZ website valid for buildings designed to NZS3604 and NZS1170. Detailed information can be obtained and used as a guide for a given property address.

http://branz.maps.arcgis.com/apps/webappviewer/index. html?id=1bade5ce36a9459aa0de4bd5cecd6e36



Property Information:Lot 3 DP 416793

Parcel ID: 7,387,597.00 Legal Description: Lot 3 DP 416793 Address: 5 Lady Fisher Place East Tamaki Earthquake Zone: Zone 1 Corrosion Zone: Zone D Climate Zone: 1 Wind Region: A Lee Zone: Rainfall Intensity (range): <u>90 - 100</u> Wind Zone (Experimental): <u>High</u>

Earthquake zones

Four earthquakes zones - zone 1 to zone 4 - are shown on a map of the North and South Islands in Figure 5.4 of NZS 3604:2011 Timber-framed buildings.

The earthquake zones in BRANZ Maps are modified versions of those. The zones are modified so that they better align with NZS 1170.5:2004 Structural design actions - Part 5: Earthquake actions - New Zealand.

BRANZ Maps also include the changes to the zone boundaries in the Canterbury region introduced by the New Zealand Building Code clause B1 compliance document published in August 2011.

Corrosion zones

Three exposure zones - zone B, zone C and zone D - are shown on a map of the North and South Islands in Figure 4.2 of NZS 3604:2011.

The corrosion zones in BRANZ Maps are our interpretation of the exposure zones in NZS 3604:2011.

The zones relate to the severity of exposure to wind-driven salt, with B being low risk, C medium risk and D high risk. *Zone D includes*:

- all offshore islands
- the area within 500 m of the coastline of New Zealand, including harbours
- the area within 100 m of tidal estuaries and sheltered inlets.

BRANZ has not attempted to define precisely what is or isn't a tidal estuary or sheltered inlet, so our maps are technically conservative in those areas.

Building Code compliance document E2/AS1 (2011) includes an exposure zone E, which is beachfront regions subject to rough seas and surf beaches. NZS 3604:2011 contains the comment: "For the purposes of NZS 3604, the corrosion protection requirements for structural fixings in exposure zones D and E are identical..."

Microclimatic factors need to be considered in all locations.

Wind regions

Wind regions and lee zones are our interpretation of Figure 5.1 in NZS 3604:2011.

Wind Zones

Wind zones are an output from a 2014 research project at BRANZ. The project aimed to see if the calculation of wind zones (in accordance with NZS 3604:2011) could be automated using GIS (geographic information system) software. The method for calculating wind zones in NZS 3604:2011 is a simplification of the method described in AS/NZS 1170.2:2011

Structural design actions - Part 2: Wind actions.

Several approximations were made in the process of creating the map. Therefore, the wind zones must be treated as indicative and used only as a reference when calculating sitespecific wind speed or only in the absence of more reliable data being available.

For example, an up-to-date council-wide wind zone map would be considered higher-resolution data, and a site-specific wind zone calculation would be higher still.

Initial user testing has shown that the wind zones in BRANZ Maps are likely to be inaccurate near escarpments or cliffs.

Climate zones

Climate zones are our interpretation of Figure B1 in NZS 4218:2004 Energy efficiency - Small building envelope.

Rainfall intensity

Rainfall intensity values are sourced from NIWA's HIRDS calculator and correspond to a 10-minute rainfall intensity with an annual probability of exceedance of 10%. These values can be used in conjunction with clause E1 of the Building Code. For other storm durations, consult the HIRDS calculator.



Overview of Producer Statements:

The producer statement system is intended to provide Building Consent Authorities (BCA's) with reasonable grounds for the issue of a Building Consent or a Code Compliance Certificate, without having to duplicate design or construction checking undertaken by others.

There are two categories of producer statement, $\ensuremath{\textit{design}}$ and $\ensuremath{\textit{construction.}}$

Within the design category there are two types of statement issued; producer statement design and producer statement design review. These statements are issued by design professionals confirming that in their professional view, part, or all of the building work as described on nominated plans and specifications has been designed in accordance with the performance requirements of the NZBC. Note the design professional can be either the designer or a design reviewer.

- (a) Producer statement design (PS1) these statements are issued by design professionals as confirmation that the building work as designed and documented complies with the NZBC
- (b) Producer statement design review (PS2) these statements are issued by design professionals who have reviewed the work of the designer (sometimes on behalf of the Council) as confirmation that the building work that they have reviewed complies with the NZBC

Within the construction category, there are two types of statement issued; producer statement construction and producer statement construction review. These statements are issued by contractors or design professionals stating in their view that part, or all of the building work as described on the consented plans and specifications has been constructed and meets certain performance requirements of the NZBC and or conditions of building consent.

(c) Producer statement construction (PS3) this statement is issued by the contractor who has performed the building work as confirmation that the building work is in accordance with the consented plans and the NZBC and is issued when Council have had limited or no involvement with specific elements of construction, such as pile driving, application of waterproofing membranes, specialist coating and cladding systems, etc

(d) Producer statement construction review (PS4) this statement is issued by the design professional1 who has reviewed the work of the contractor as confirmation that the building work has been carried out in accordance with the consented plans and the NZBC and is issued where the design professional or Council has requested involvement or supervision by a suitably qualified person2 for building work, such as pile driving, compaction of fill, placement of steel, etc.

Producer Statements

All PS1's must be made specific to the project address with a cover sheet and relevant drawings (where required), marked up and included in the PS1.

MPG offer design tables and associated drawings to assist with sales & quoting. The documents are available for download at www.metroglass.co.nz or online from www.masterspec.co.nz.

To request a generic balustrade or pool fence PS1:

Metro Glass offer a range of "generic" balustrade system solutions.

PS1 documents for these systems can be requested from the design and technical centre within our website - www.metroglass.co.nz.

You will need to register your details and complete a balustrade or pool fence generic PS1 request (there is a guidance document within the website to assist in completing this process).

Please note: It is the responsibility of the designer to ensure that the design installation details exactly match the PS1 installation details.

Alternatively e-mail your project details to technical@metroglass.co.nz and one of our team will assist with your balustrade or pool fence PS1 request.

To request a specific engineering design (SED) PS1:

Not all PS1 requests have "generic" solutions available at this time. Metro Glass has a team of experienced engineers dedicated to providing solutions for your glass and glazing projects.

You can request SED from the design and technical centre within our website - www.metroglass.co.nz. There are a selection of RFI forms which contain the minimum required details for and most common SED projects. Please submit the completed RFI form and required drawings to technical@metroglass.co.nz

Alternatively e-mail your project details to technical@ metroglass.co.nz and one of our team will assist with your SED PS1 request. SED requests may incur engineering design and documentation fees.

Please Note:

A PS1 is not required for fully framed, partly framed or infill balustrade glazing protecting a fall of 1m or more, when the scope of the work complies EXACTLY with the terms of B1 amend 15 & NZS4222.3 amd 1, as per one of the tables in NZS4223.3 (table 7-12). Also ensure you comply with the 5m height above FFL requirements noted in NZS4223.1 amd 1, clause 3.8.3.2 (laminated glass that is prevented from disengaging from the perimeter frame when glazing more than 5m above an occupied space).

A PS1 is not required for fully framed or partly framed windbreaks that do NOT protect a fall of 1m or more. They shall be safety glass – Thickness in accordance with NZS4223 Part 4 (check wind) & NZS4223.3 amd 1, table 1 square metreage limitations apply. Point fixed wind breaks will require specific engineering design & enquiries for such should be emailed to technical@metroglass.co.nz

Ensure the proposed balustrade is in the consented documents (or seek a building consent amendment) using our site specific PS1 **before** the system is installed.

Summary:

MPG PS1: MPG do not issue PS1s retrospectively. Site specific PS1s are required to be obtained from MPG prior to commencement of installation work.

MPG PS3 & MPG Installation: A PS3 can be issued to confirm glazing complies with the Building Code. MPG does not have to issue a PS1 or a design statement for a PS3 to be issued. However, when a PS1 (or other design documentation) has been issued, the installation and hence the PS3 must be in accordance with the issued PS1 (or other design documentation).

MPG PS3 & Third Party Installation: Where MPG do not undertake installation work, MPG will not issue a PS3. The PS3 will be the responsibility of the relevant third party undertaking installation who will need to certify compliance to the relevant PS1.



BALUSTRADE PRODUCT OVERVIEW

Commercial

Below is an overview of balustrade systems when used to protect a fall over 1m. Please refer to specific section, if specifying system for use as a Frameless Pool Fence or windbreak screen, as other specific criteria will apply:

- Frameless Pool Fences / Gates (See section 7)
- Windbreaks (See section 7)

PosiGlaze System (Base and Side Fix)

PosiGlaze is the perfect choice for residential to light commercial installations where a 1.5kN frameless glass balustrade is desired. The PosiGlaze System was developed for cantilevered structural balustrades to cope with the transition from monolithic Toughened Safety Glass (TSG) to toughened Laminated Structural Glass (TLSG).

The unique design uses a special high strength hollow core aluminium extrusion and special glass clamp kits that clamp the glass and locate into the section. This means the system can be used on 12 & 15mm TSG; 15.2, 17.2, & 21.2 TLSG with SAFELITE® STF (Sentry) Interlayer; and 15.2, 17.2 & 21 TLSG with EVA Interlayer; without holes in the glass.

www.metroglass.co.nz



System	Max Wind Load	Occupancy Type	Glass Capacities	Maximum Heights	Suitable substrate
PosiGlaze System (Base Fix)*	Extra High Subject to glass type and fixing method	A, C, E, C1/C2, C3 and D	12, 15, 8 19mm nominal thickness Toughened Safety Glass (TSG), with an interlinking top rail.	1150mm above top of channel	Steel Concrete
			15.2, 17.2, & 21.2 TLSG with SAFELITE® STF (Sentry) Interlayer nominal thickness without the need for an Interlinking rail.		
			13.52, 17.52 & 21.5 TLSG nominal thickness with EVA Interlayer with the use of brackets.		
PosiGlaze System (Side Fix)*	Extra High Subject to glass type and fixing method	A, C, E, C1/C2, C3 and D	12, 15, 8 19mm nominal thickness Toughened Safety Glass (TSG), with an interlinking top rail.	1150mm above top of channel	Timber Steel Concrete
			15.2, 17.2, 8 21.2 TLSG with SAFELITE® STF (Sentry) Interlayer nominal thickness without the need for an Interlinking rail.		
			13.52, 17.52 & 21.5 TLSG nominal thickness with SAFELITE® EVA Interlayer with the use of brackets.		





Residential

Infinity System (Base and Side Fix)

Infinity is a cantilevered, aluminium balustrade system that utilises proprietary clamps for installation of either 12mm or 15mm nominal thick Toughened Safety Glass (TSG), with an interlinking top rail. Or Laminated Structural Glass (LSG) with a SAFELITE® STF (Sentry) interlayer 13.52mm or 17.52mm nominal thickness without the need for an Interlinking rail.

Manufactured from architectural grade aluminium, the proprietary Infinity clamps fix the toughened glass or laminated panels without a requirement for holes in the glass. Drawing from the patented technology, the Infinity System is adjustable, even if the deck moves after installation. Infinity balustrade clamps are set at regular centres, with alignment via a continuous back plate. A matching continuous linear front cover plate and a 38mm x 30mm interlinking top rail finishes off the system, producing a low profile modern look.



System	Max Wind Load	Оссирапсу Туре	Glass Capacities	Maximum Heights	Suitable substrate
Infinity (Base Fix)*	Very High or 2.0kPa Subject to glass type and fixing method	A, A Other, B, E and C3	12mm or 15mm nominal thickness Toughened Safety Glass (TSG), with an interlinking top rail. Laminated Structural Glass (LSG) with a SAFELITE® STF (Sentry) interlayer 13.52mm or 17.52mm nominal thickness without the need for an Interlinking rail.	1300mm above top of clamp	Steel Concrete
Infinity (Side Fix)*	Very High or 2.0kPa Subject to glass type and fixing method	A, A Other, B, E and C3	12mm or 15mm nominal thickness Toughened Safety Glass (TSG), with an interlinking top rail. Laminated structural glass (LSG) with a SAFELITE® STF (Sentry) interlayer 13.52mm or 17.52mm nominal thickness without the need for an Interlinking rail.	1300mm above bottom of clamp including packers	Timber Steel Concrete

*All Subject to glass type and fixing method. Information provided is up to date but can change without further notice.

50mm DoubleDisc System (MB50 Side Fix)

The DoubleDisc MB50 Anchor is a 50mm Diameter traditional stainless steel anchor fixing offering from the Metro balustrade range - ideal for those seeking a more industrial Frameless Glass Balustrade aesthetic.

DoubleDisc Anchors are manufactured from solid 316 Marine Grade Stainless Steel. The 30mm long body sets the 12mm/15mm toughened glass panels out from the deck to assist with water draining and cleaning. The DoubleDisc Anchor system is ideal for external balconies and stairs - as well as for internal stairs and landings. It can be fixed directly to either timber, steel or concrete surfaces and is finished with a 38mm x 30mm interlinking top rail in a choice of powder coat colours to suit. The finish options are mirror polished stainless steel with a hidden fixing detail or satin stainless steel with a visible fixing detail, adjustable options are also available.



System	Max Wind Load	Occupancy Type	Glass Capacities	Maximum Heights	Suitable substrate
50mm Face Discs System (DoubleDisc MB50)*	Extra High Subject to glass type and fixing method	A, B, E, and C3	12mm or 15mm nominal thickness Toughened Safety Glass (LSG), with EVA Interlayer with the use of brackets and an interlinking top rail. Laminated Structural Glass (LSG) with a SAFELITE® STF (Sentry®) interlayer 13.52mm or 17.52mm nominal thickness without the need for an Interlinking rail.	1250mm above centre of top disc	Timber Steel Concrete

*All Subject to glass type and fixing method. Information provided is up to date but can change without further notice.



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75mm SingleDisc (MB75 Side Fix)

The SingleDisc MB75 was born from testing and modelling balustrade fixings to determine the optimum economical fitting for clamp fixing balustrades. The outer disc was profiled to give an attractive appearance and the single fixing point means it can be located on the edge of narrow concrete slabs or steel profiles.



System	Max Wind Load	Occupancy Type	Glass Capacities	Maximum Heights	Suitable substrate
75mm (SingleDisc MB75)*	Extra High Subject to glass type and fixing method	A, B, E and C3	12mm or 15mm nominal thickness Toughened Safety Glass (LSG), with SAFELITE® EVA Interlayer with the use of brackets and an interlinking top rail. Laminated Structural Glass (LSG) with a SAFELITE® STF (Sentry) interlayer 13.52mm or 17.52mm nominal thickness without the need for an Interlinking rail.	1250mm above centre of top disc	Steel Concrete

*All Subject to glass type and fixing method. Information provided is up to date but can change without further notice.

100mm SingleDisc (MB100 Side Fix)

The SingleDisc MB100 was designed to provide a more solid aesthetic look to single point clamping, as an option to DoubleDisc, MB50 or continuous plate systems. The outer and inner discs are simple circular profiles and the single fixing point means it can be located on the edge of narrow concrete slabs or steel profiles.

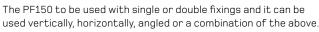


System	Max Wind Load	Occupancy Type	Glass Capacities	Maximum Heights	Suitable substrate
100mm (SingleDisc MB75)*	Very High Subject to glass type and fixing method	A, B, E and C3	12mm or 15mm nominal thickness Toughened Safety Glass (LSG), with SAFELITE® EVA Interlayer with the use of brackets and an interlinking top rail. Laminated Structural Glass (LSG) with a SAFELITE® STF (Sentry®) interlayer 13.52mm or 17.52mm nominal thickness without the need for an Interlinking rail.	1250mm above centre of top disc	Steel Concrete



PlateFix (PF150 Side Fix)

Designed in response to demands for maximum visibility, the PlateFix PF150 Frameless Glass Balustrade presents minimal fixings and clearer views beyond the glass panels. The PlateFix PF150 is an architectural grade stainless steel clamp that fixes 12mm/15mm thick toughened glass panels to the external edge of balconies and stairs - as well as for internal stairs and landings. The PlateFix PF150 has a 50mm thick body which sets the glass out from the deck 20mm, assisting with water drainage and cleaning, but fixing centres are up to 50% wider than our traditional DoubleDisc Anchors - providing a comparatively less visual and far more linear fixing detail.





System	Max Wind Load	Occupancy Type	Glass Capacities	Maximum Heights	Suitable substrate
PlateFix (PF150)*	Very High Subject to glass type and fixing method	A, B, E, and C3	12mm or 15mm nominal thickness Laminated Structural Glass (LSG), with SAFELITE® EVA Interlayer with the use of brackets and an interlinking top rail. Laminated Structural Glass (LSG) with a SAFELITE® STF (Sentry®) interlayer 13.52mm or 17.52mm nominal thickness without the need for an Interlinking rail.	1250mm above centre of top PF150 glass hole	Timber Steel Concrete

*All Subject to glass type and fixing method. Information provided is up to date but can change without further notice.

Strut Post PL200 (Base Fix) Strut Post PL400 (Side Fix)

The Strut Post system has a patented adjustable clamping system, designed for 12mm thick toughened glass without holes. The system is designed for heights from 1200mm for balustrades. Available as base fix or side fix, Strut Posts have crafted covers which hide the engineered stainless steel fixings. Manufactured from extruded architectural grade aluminium, Strut Posts are a popular choice for their modern, minimalist finish.



System	Max Wind Load	Occupancy Type	Glass Capacities	Maximum Heights	Suitable substrate
Strut Post PL200 (Base Fix)*	High Subject to glass type and fixing method	A, A other, B, E,	12mm nominal thickness Toughened Safety Glass (TSG), with an interlinking top rail.	1200mm above deck level	Timber Steel Concrete
Strut Post PL400 & (PL200 Gutter Bracket) (Side Fix)*	High Subject to glass type and fixing method	A, A other, B, E,	12mm nominal thickness Toughened Safety Glass (TSG), with an interlinking top rail.	1200mm above deck level	Timber Steel Concrete





Semi Frameless Aluminium Posts (Base and Side Fix)

- AP65 Aluminium Post

- AP78 Aluminium Post

The semi frameless system can incorporate either toughened glass in a range of styles including fully framed or semi frameless glass balustrade finishes. Further options include the addition of an intermediate rail for a split rail finish. Semi Frameless glass balustrades include a handrail which are either top or front mounted. The top rail is fashioned from one of five styles of handrails - round, rectangular, slimline interlinking rail, aerofoil or double aerofoil, all finished in a powder coat colour matching the posts. The front mounted interlinking rails are fitted to a bracket, which fixes to the balustrade post face, 100mm below the top edge. In a low height system an S25 / S40 Link Rail or an Edgetec® 220 Link Rail can be used providing it is tied back to each end of the building.

Engineered and tested to comply with the NZ Building Code, Metro's Semi Frameless balustrade has been designed to fit most NZ building scenarios including installation on modern floating or waterproof decks.



System	Max Wind Load	Occupancy Type	Glass Capacities	Maximum Heights	Suitable substrate
AP65 Aluminium Post*	2.0kPa subject to post spacing and fixing method	A, A other	10mm - 13.2mm nominal thickness toughened Laminated Structural Glass (TLSG), with an SAFELITE® EVA Interlayer, sealant and an interlinking top rail.	1400mm	Timber Steel Concrete
AP78 Aluminium Post*	2.25kPa subject to post spacing and fixing method	A, B, E, C1/C2, C3 and D	12mm - 15mm nominal thickness Toughened Safety Glass (TSG), with an interlinking top rail.	1500mm	Timber Steel Concrete



Infinity System (Base and Side Fix)

Infinity is a cantilevered, aluminium balustrade system that utilises proprietary clamps for installation of either 12mm or 15mm nominal thick Toughened Safety Glass (TSG), with an interlinking top rail. Or SAFELITE® Toughened Laminated Safety Glass (TLSG) with a STF (Sentry®) interlayer 13.52mm or 17.52mm nominal thickness without the need for an Interlinking rail.

- CLEAN LINEAR DESIGN The Infinity system offers a sleek design via a continuous linear front cover plate producing a low profile modern look.
- LIGHT WEIGHT AND EXTREMELY STRONG Cleverly designed out of extruded aluminium, saving weight yet keeping strength.
- DESIGNED AND ASSEMBLED IN NEW ZEALAND to meet our harsh environmental conditions.



Key Features

- The Infinity System can be base fixed (top) or side fixed (face) mounted.
- Proprietary clamps fix glass panels no need for holes in glass.
- Glass Panels are simple to install, align and adjust.
- Hydraulic Pool Gate & Panel Clip Hardware, is available to suit pool balustrade applications. (Refer to Frameless Pool Fences, Gates and Wind Break Screen Section for specific design notes: Section 7, page 496).

Material Finish

- Standard finish is Natural Anodised.
- Powdercoated upon request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.
- Important instructions Attachment to structures;
 - An EPDM or similar material spacer must be used to separate all aluminium items from all timber, concrete and steel structures. Failure to do so can lead to the chemicals in the structure affecting the surface finish on the aluminium.
- All fixings must be Stainless Steel.

Occupancy Type

- Suitable for occupancy types A, A Other, B, E and C3
- Occupancy types as per AS/NZ 1170.1.2002.

Windzone

- Exceeds the wind loading for all Wind Zones up to and including Very High Wind Zone as set out in NZS 3604:2011
- Max design Wind pressure subject to glass type and fixing method.

The system is glazed with Metro Performance Glass, as follows:

- TEMPAFLOAT® 12mm 8 15mm nominal thickness, monolithic toughened safety glass (TSG) with interlinking rail.
- SAFELITE® STF (Sentry®) 13.52mm & 17.52mm nominal thickness toughened laminated safety glass (TLSG) with rigid interlayer. Stiffener brackets or interlinking rail not required (provided minimum panel length requirements are satisfied).

Interlinking Rail

All monolithic toughened frameless glass balustrades must have an Interlinking Rail to conform to NZS 4223.3.2016, including the latest amendment of NZBC B1.

Compliance

Complies with AS/NZS 1170:2002, NZS 4223.3.2016, NZ Building Code B1, F2, F4 and F9.

Scope of Use

- Glass Channel Balustrade System (base and side fixing) for Domestic and Light Commercial applications.
- Constructed from high quality aluminium, the Infinity System uses proprietary clamps to fix the glass panels, without any need for holes in the glass.
- Balustrade clamps are set at regular centres, with alignment via a continuous back plate.
- A matching continuous linear front cover plate and an interlinking top rail finishes off the system, producing a low profile modern look.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

SAFELITE® STF (Sentry®) glass layer types and nominal glass thickness orientation

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Outer Layer glass Thickness (Nominal mm)
13.52	6	1.52 Sentry®	6
17.52	8	1.52 Sentry®	8

> An interlinking rail is not required when specifying SAFELITE® STF (Sentry®) interlayer. (minimum panel widths apply).

Note: Inner layer refers to the balcony side



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BALUSTRADE SYSTEM COMPONENTS – SIDE FIX BA124

Individual Parts – Infinity (Domestic and Commercial Applications)



_	Individual	Pa
\geq		
ш	Product	Mo
	INFINITY REAR	300
	COVER	300
S	and the second se	300
\succ		300
S		
\succ		
—		
7	INFINITY FRONT	300
	COVER	300
LL_	the second s	300
7		30
	-	
		200

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
INFINITY REAR	300421	2500mm	ANOD NATURAL	ALUM 6063	REAR COVER	BALUSTRADE	Internal &
COVER	300422	5000mm	ANOD NATURAL			SYSTEM SIDE FIX	External
and the second se	300423	2500mm	MILL - FINISH				
	300424	5000mm	MILL - FINISH				æ
		12mm or 15mm Toughened Glass	ON REQUEST: POWDERCOAT				၂ရှိ
		13.52mm or 17.52mm Sentryglas®					
INFINITY FRONT	300407	2500mm	ANOD NATURAL	ALUM 6063	FRONT COVER	BALUSTRADE	Internal &
COVER	300408	5000mm	ANOD NATURAL			SYSTEM SIDE FIX	External
	300409	2500mm	MILL - FINISH			010 E T IX	
	300410	5000mm	MILL - FINISH				ا ال
		12mm or 15mm Toughened Glass	ON REQUEST: POWDERCOAT				၂ရှိ
		13.52mm or 17.52mm Sentryglas®					
	300356	12-13.52mm	BLACK	PLASTIC	CLAMP KIT	BALUSTRADE	Internal &
КІТ	300357	15-17.52mm	BLACK			SYSTEM SIDE FIX	External
-							
INFINITY REAR COVER SPACER	301403	1mm alignment plate	plate SILVEN PROST ALEON COOS HEATING	REAR COVER SPACER	BALUSTRADE SYSTEM	Internal & External	
PLATE	301404	1mm alignment plate	MILL - FINISH		PLATE		
	301405	5mm alignment plate	SILVER FROST				
	301406	5mm alignment plate	MILL - FINISH				ရာ
			ON REQUEST: POWDERCOAT				
INFINITY STAND	301408	15mm	SILVER FROST	ALUM 6063	STANDOFF	BALUSTRADE	Internal &
OFF PLATE	301407	15mm	MILL - FINISH		PLATE	SYSTEM SIDE FIX	External
	301795	15mm	BLACK			*Used to standoff	
		THICKNESS: 100 w x 94 h x 15mm	ON REQUEST: POWDERCOAT			the Infinity System 15mm off the structure	ျိုး
INFINITY END	300490	50w x 117h mm	ANOD NATURAL	ALUM 6063	END CAP	BALUSTRADE	Internal &
CAP	300491	50w x 117h mm	MILL - FINISH			SYSTEM SIDE FIX	External
			ON REQUEST:				
			POWDERCOAT				
1 11							ျို
BULB SEAL	302088	per (m)	BLACK	RUBBER	BULB SEAL	BALUSTRADE	Internal &
\sim						SYSTEM COMPONENT	External
							ತ್ರಿ
							0



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BALUSTRADE FIXING COMPONENTS – SIDE FIX BA124

Concrete Substrate (Domestic and Commercial Applications)

CONCRETE FIXING – INFINITY

A, B, E, C3 OCCUPANCY TYPE

A, B, E, C3 UCC							WARRANTY
Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
THREADED ROD FOR CHEMICAL ANCHOR	501164	M12 x 110mm	SS	316 STAINLESS STEEL	THREADED ROD	FIXING COMPONENT	Internal 8 External
M12 BOLT	302170	M12 x 110mm Bolt	SS	316 STAINLESS STEEL	BOLT		0
M12 NUT	301028	M12 Hex Nut	SS	316 STAINLESS STEEL	NUT		
M12 WASHER	301603	24x2.5mm	SS	316 STAINLESS STEEL	WASHER		
HILTI HIT-HY 200 MAX CHEMICAL ANCHOR	300003	330ml	ADHESIVE	CARTRIDGE	CHEMICAL ANCHOR		
EPDM / FOAM TAPE	302100	170 X 1mm	BLACK	RUBBER	EPDM	EPDM	
	302101	70 X 1mm	BLACK	RUBBER	EPDM	BARRIER	

Rear Cover Attach: Timber - No 6x40 C/s PK Steel - M5 Machine screw x50 + nut

Concrete - No 6x40 C/S PK + Nylon Plug (Reduce by 15mm if spacer plate not used)



INFINITY SYSTEM

BALUSTRADE FIXING COMPONENTS – SIDE FIX BA124

Timber Substrate (Domestic and Commercial Applications)

TIMBER FIXING – INFINITY A, A Other & C3 OCCUPANCY TYPE



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
COACH SCREW	301911	M12 x130 Min Thread engagement 90mm	SS	316 STAINLESS STEEL	SCREW	FIXING COMPONENT	Internal & External
M12 NUT	301028	M12 Hex Nut	SS	316 STAINLESS STEEL	NUT	FIXING COMPONENT	Jb∰
M12 WASHER	301603	24x2.5mm	SS	316 STAINLESS STEEL	WASHER	FIXING COMPONENT	
SIKA SUPERGRIP 2HOUR BOND	300006	310ml	ADHESIVE	CARTRIDGE	SUPER BOND	FIXING COMPONENT FOR TIMBER	
EPDM / FOAM TAPE	302100	170 X 1mm	BLACK	RUBBER	EPDM	EPDM	
	302101	70 X 1mm	BLACK	RUBBER	EPDM	BARRIER	

Rear Cover Attach:

Timber - No 6x40 C/s PK

Steel - M5 Machine screw x50 + nut

Concrete - No 6x40 C/S PK + Nylon Plug (Reduce by 15mm if spacer plate not used)



BALUSTRADE FIXING COMPONENTS – SIDE FIX BA124

Timber Substrate (Domestic and Commercial Applications)

TIMBER FIXING – INFINITY

B, E C3 OCCUPANCY TYPE

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
COACH SCREW	301909	M12 x140 Min Thread engagement 130mm	SS	316 STAINLESS STEEL	SCREW	FIXING COMPONENT	Internal & External
M12 NUT	301028	M12 Hex Nut	SS	316 STAINLESS STEEL	NUT	FIXING COMPONENT	JU ∰
M12 WASHER	301603	24x2.5mm	SS	316 STAINLESS STEEL	WASHER	FIXING COMPONENT	
SIKA SUPERGRIP 2HOUR BOND	300006	310ml	ADHESIVE	CARTRIDGE	SUPER BOND	FIXING COMPONENT FOR TIMBER	
EPDM / FOAM TAPE	302100	170 X 1mm	BLACK	RUBBER	EPDM	EPDM	
	302101	70 X 1mm	BLACK	RUBBER	EPDM	BARRIER	

Rear Cover Attach:

Timber - No 6x40 C/s PK

Steel - M5 Machine screw x50 + nut

Concrete - No 6x40 C/S PK + Nylon Plug (Reduce by 15mm if spacer plate not used)

RDWARE



INFINITY SYSTEM

BALUSTRADE FIXING COMPONENTS – SIDE FIX BA124

Steel Substrate (Domestic and Commercial Applications)

STEEL FIXING - INFINITY

A, B, E, C3 OCCUPANCY TYPE



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
HEX SCREW M12 X35MM	301305	M12 x 35mm	SS	316 STAINLESS STEEL	HEX SCREW	FIXING COMPONENT	Internal 8 External
M12 NUT	301028	M12 Hex Nut	SS	316 STAINLESS STEEL	NUT	FIXING COMPONENT	0
M12 WASHER	301603	24x2.5mm	SS	316 STAINLESS STEEL	WASHER	FIXING COMPONENT	
EPDM / FOAM TAPE	302100	170 X 1mm	BLACK	RUBBER	EPDM	EPDM	
	302101	70 X 1mm	BLACK	RUBBER	EPDM	BARRIER	

Rear Cover Attach:

Timber - No 6x40 C/s PK

Steel - M5 Machine screw x50 + nut

Concrete - No 6x40 C/S PK + Nylon Plug (Reduce by 15mm if spacer plate not used)



BALUSTRADE SYSTEM COMPONENTS – BASE FIX BA122

Individual Parts – Infinity (Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
INFINITY FRONT /	300056	2500mm	ANOD NATURAL	ALUM 6063	FRONT / REAR	BALUSTRADE	Internal &	
REAR COVER	300058	5000mm	ANOD NATURAL		COVER	SYSTEM BASE FIX	External	
	300055	2500mm	MILL - FINISH			BROETIK		
	300057	5000mm	MILL – FINISH				(#)	
		12mm or 15mm Toughened Glass	ON REQUEST: POWDERCOAT				၂ရို	
		EXTRUSION SIZE: 13.52mm or 17.52mm Sentryglas®						
INFINITY BASE	300052	2500mm	ANOD NATURAL	ALUM 6063	BASE PLATE	BALUSTRADE	Internal &	
PLATE	300054	5000mm	ANOD NATURAL			SYSTEM BASE FIX	External	
-	300051	2500mm	MILL - FINISH					
	300053	5000mm	MILL - FINISH					
	Toughened Glass ON REQUEST: POWDERCOAT EXTRUSION SIZE: 13.52mm or 17.52mm Sentryglas® POWDERCOAT NFINITY CLAMP 300354 12-13.52mm			ଞ୍ଜିର୍ମାମ				
INFINITY CLAMP	300354	12-13.52mm	BLACK	PLASTIC	CLAMP KIT	BALUSTRADE	Internal &	
КІТ	300355	15-17.52mm	BLACK			SYSTEM BASE FIX	External	
							 ¶∰	
INFINITY BASE PLATE PACKER	301045	1mm alignment plate	SILVER FROST	ALUM 6063	BASE PLATE PACKER	BALUSTRADE SYSTEM BASE FIX *Used to align clamps		Internal & External
-	301046	1mm alignment plate	MILL - FINISH					
	301048	5mm alignment plate	SILVER FROST					
	301047	5mm alignment plate	MILL - FINISH				ಕ್ರ	
			ON REQUEST: POWDERCOAT				U	
INFINITY END	300489	300489	ANOD NATURAL	ALUM 6063	END CAP	BALUSTRADE	Internal &	
CAP	300488	300488	MILL - FINISH			SYSTEM BASE FIX	External	
			ON REQUEST: POWDERCOAT					
KIT INCLUDES : X2 No7 Plastic plug + 8g x 25 SS CS x2 Screw							ξ	
BULB SEAL	302088	per (m)	BLACK	RUBBER	BULB SEAL	BALUSTRADE	Internal &	
						SYSTEM COMPONENT	External	



10

HARDWARE

BALUSTRADE FIXING COMPONENTS – BASE FIX BA122

Concrete Substrate (Domestic and Commercial Applications)

CONCRETE FIXING – INFINITY

A, B, E, C3 OCCUPANCY TYPE



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
THREADED ROD FOR CHEMCIAL ANCHOR	501164	M12 x 110mm	SS	316 STAINLESS STEEL	THREADED ROD	FIXING COMPONENT	Internal 8 External
	302170	M12 x 110mm Bolt	SS	316 STAINLESS STEEL	BOLT		0
M12 NUT	301028	M12 Hex Nut	SS	316 STAINLESS STEEL	NUT		
M12 WASHER	301603	24x2.5mm	SS	316 STAINLESS STEEL	WASHER		
HILTI HIT-HY 200 MAX CHEMICAL ANCHOR	300003	330ml	ADHESIVE	CARTRIDGE	CHEMICAL ANCHOR		
EPDM / FOAM TAPE	302100	170 X 1mm	BLACK	RUBBER	EPDM	EPDM	
	302101	70 X 1mm	BLACK	RUBBER	EPDM	BARRIER	

Rear Cover Attach: Timber - No 6x40 C/s PK Steel - M5 Machine screw x50 + nut Concrete - No 6x40 C/S PK + Nylon Plug (Reduce by 15mm if spacer plate not used)



BALUSTRADE FIXING COMPONENTS – BASE FIX BA122

Timber and Steel Substrates (Domestic and Commercial Applications)

TIMBER FIXING – INFINITY

A, B, E, C3 OCCUPANCY TYPE

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
COACH SCREW	301981	M12 x 160mm	SS	316 STAINLESS	SCREW	FIXING	Internal &
	301910	M12 x 180mm	SS	STEEL		COMPONENT	External
		M12 Min Thread engagement 150mm					 اللها اللها اللها
M12 NUT	301028	M12 Hex Nut	SS	316 STAINLESS STEEL	NUT	FIXING COMPONENT	_ ا
M12 WASHER	301603	24x2.5mm	SS	316 STAINLESS STEEL	WASHER	FIXING COMPONENT	
SIKA SUPERGRIP 2HOUR BOND	300006	310ml	ADHESIVE	CARTRIDGE	SUPER BOND	FIXING COMPONENT FOR TIMBER	
EPDM / FOAM TAPE	302100	170 X 1mm	BLACK	RUBBER	EPDM	EPDM	
	302101	70 X 1mm	BLACK	RUBBER	EPDM	BARRIER	

Rear Cover Attach:

Timber - No 6x40 C/s PK

Steel - M5 Machine screw x50 + nut

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Concrete - No 6x40 C/S PK + Nylon Plug (Reduce by 15mm if spacer plate not used)

ARDWARE

ARRANTY



INFINITY SYSTEM

BALUSTRADE FIXING COMPONENTS – BASE FIX BA122

Steel Substrate (Domestic and Commercial Applications)

STEEL FIXING - INFINITY

A, B, E, C3 OCCUPANCY TYPE



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
HEX SCREW M12 X35MM	301305	M12 x 35mm	SS	316 STAINLESS STEEL	HEX SCREW	FIXING COMPONENT	Internal 8 External
M12 NUT	301028	M12 Hex Nut	SS	316 STAINLESS STEEL	NUT	FIXING COMPONENT	0
M12 WASHER	301603	24x2.5mm	SS	316 STAINLESS STEEL	WASHER	FIXING COMPONENT	
EPDM / FOAM TAPE	302100	170 X 1mm	BLACK	RUBBER	EPDM	EPDM	
	302101	70 X 1mm	BLACK	RUBBER	EPDM	BARRIER	

Rear Cover Attach:

Timber - No 6x40 C/s PK

Steel - M5 Machine screw x50 + nut

Concrete - No 6x40 C/S PK + Nylon Plug (Reduce by 15mm if spacer plate not used)



Balustrade Stiffener Brackets (For Aligning and Stiffening Panels)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
90 DEGREE STIFFENER BRACKET (GLASS TO WALL)	300153	65x55x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
	300154	65x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				ال ال
90 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300151	75x50x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal 8 External
_	300152	88x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				ال ال ال
180 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300149	70x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal 8 External
26	300150	103x25mm GLASS THICKNESS: 17.5-21.5mm	SS				€ E E E E E E E E E E E E E E E E E E E

NOTE: All brackets are supplied with a selection of gaskets to suit glass thickness.











Aluminium LinkRail 38x30mm – For 12mm and 15mm Glass

- 38 x 30mm Aluminium Link Rail.
- Available in Natural Anodisied Finish 20 microns as standard or Silver Frost powdercoat. Special colours on request (Powdercoating or Anodising).
- Rubber gasket available to suit 12mm or 15mm glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.



INFINITY SYSTEM

Model Sizes mm

Finish

Material

Edgetec[®] 220 Link Rail

Product

TTOULCC		51203 11111		Maceriai	Туре	Аррисасіон	Area
EDGETEC® 220 LINK RAIL	300728 300729	5800mm 5800mm	ANOD – Natural SILVER FROST	ALUM 6063	LINK RAIL	BALUSTRADE LINK RAIL	Internal & External
FULL LENGTH	300729	5800mm 5800mm	MILL FINISH				
	300727						
		GLASS THICKNESS:	ON REQUEST: POWDERCOAT				æ
		12-15mm					_
		OVERALL SIZE:					
		38 x 30mm					
EDGETEC® 220	300725	2900mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL HALF LENGTH	300726	2900mm	SILVER FROST				LINK RAIL
	300724	2900mm	MILL FINISH				
		(Half Length) GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®]	300593	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
220 LINK RAIL RUBBER GASKET		GLASS THICKNESS:			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT	External
		12mm					
EDGETEC®	300594	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
220 LINK RAIL RUBBER GASKET		GLASS THICKNESS:			GASKET FOR EDGETEC®	LINK RAIL COMPONENT	External
		15mm			220 LINK RAIL	*For a 5.8m Link Rail x2 rubber gaskets lengths are required	
EDGETEC [®] 220	300847	80x22.8x5mm	MILL	ALUM 6063	180 DEGREE	BALUSTRADE	Internal &
					STRAIGHT JOINER	LINK RAIL COMPONENT	External
EDGETEC® 220	300848	50x50x5mm	MILL	ALUM 6063	90 DEGREE	BALUSTRADE	Internal &
LINK RAIL 90 DEGREE JOINER					CORNER JOINER	LINK RAIL COMPONENT	External
\wedge							
EDGETEC® 220	300493	38.4 x 30.4mm	ANOD – Natural	ALUM 6063	END CAP	BALUSTRADE	Internal &
END CAP	300494	38.4 x 30.4mm	SILVER FROST			LINK RAIL COMPONENT	External
	300492	38.4 x 30.4mm	MILL				
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220 LINK RAIL FIXED 90 DEGREE	301985	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External
CORNER	301986	Suits Edgetec® 220 Rail	MILL		CUNNECTUR	CUMPUNENI	
-		(Component)	ON REQUEST: POWDERCOAT				(#Second



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VARRANTY

Area

Application

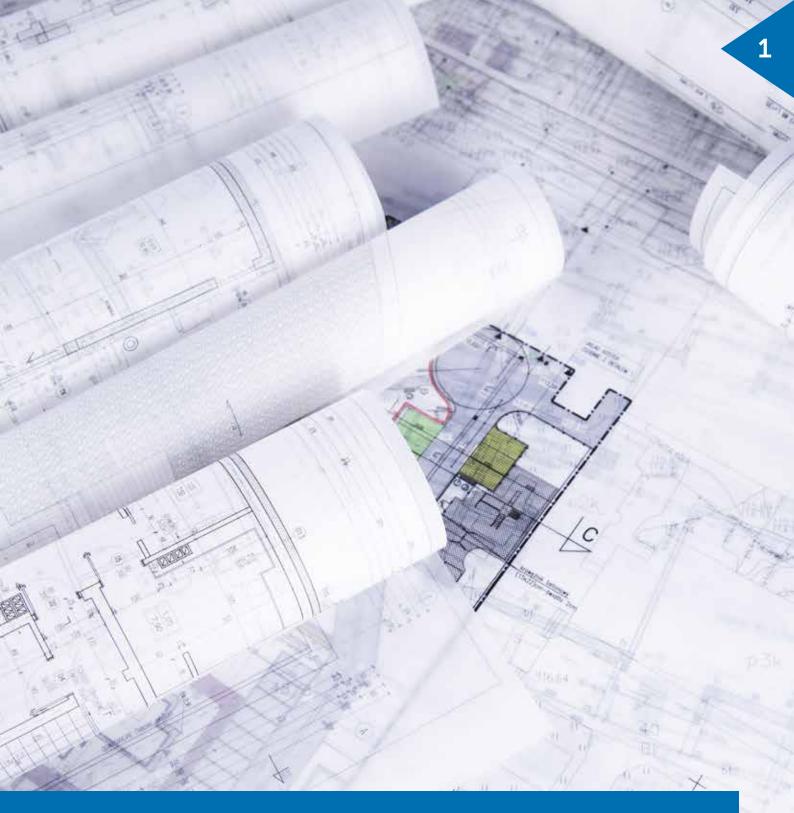
Туре



Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC®	301987	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	ADJUSTABLE	BALUSTRADE	Internal &
220 LINK RAIL HORIZONTAL ADJUSTABLE	301988	Suits Edgetec® 220 Rail	MILL		HORIZONTAL JOINER	LINK RAIL COMPONENT	External
JOINER		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220 LINK RAIL	301989	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	ADJUSTABLE VERTICAL	BALUSTRADE LINK RAIL	Internal & External
VERTICAL ADJUSTABLE JOINER	301990	Suits Edgetec® 220 Rail	MILL		JOINER	COMPONENT	
		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220	301003	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)	301004	120 x 45mm	MILL	_	BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC® 220	301005	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)	301006	120 x 45mm	MILL	_	BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC® 220	301002	100 x 65mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT	301149	100 x 65mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	∟ ∎ ∰
EDGETEC® 220	301991	60 x 46mm	SILVER FROST	ALUM 6063	POST END	BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT*	301992	60 x 46mm	MILL	-	MOUNT FOR AP65	LINK RAIL COMPONENT	External
*Suits AP65 Series Aluminium Post		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
SCREW	301993	6G x 1/4" Sq	SS	304 STAINLESS	SCREW	PAN HEAD	Internal &
		GLASS THICKNESS: 12mm, 15mm		STEEL		SCREW SUITS COMPONENT 300847 301985 301986 301003 301004 301005 301005 301006 301002 301149 301991 301992	
SILICONE – STRUCTURAL GLAZING	300011	V60	ADHESIVE	CARTRIDGE	SILICONE	FIXING COMPONENT	Internal & External





Design Tables

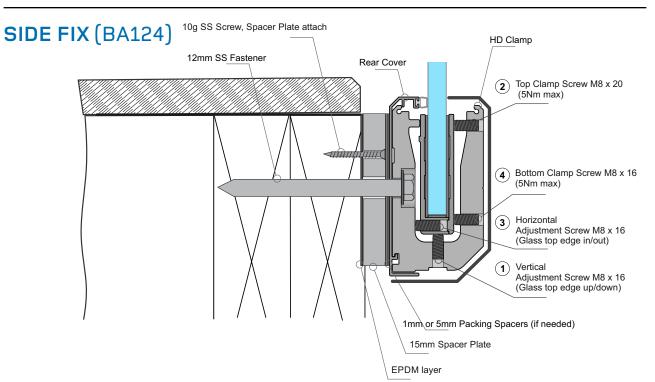
Design tables for this balustrade system are currently in development, and will be added once complete.

For information regarding glass types and typical fixing spacings for a given design wind pressure, please contact Metro Technical team - (09) 927 3000, technical@metroglass.co.nz

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INFINITY BALUSTRADE SYSTEM

Installation / Fitting Instructions



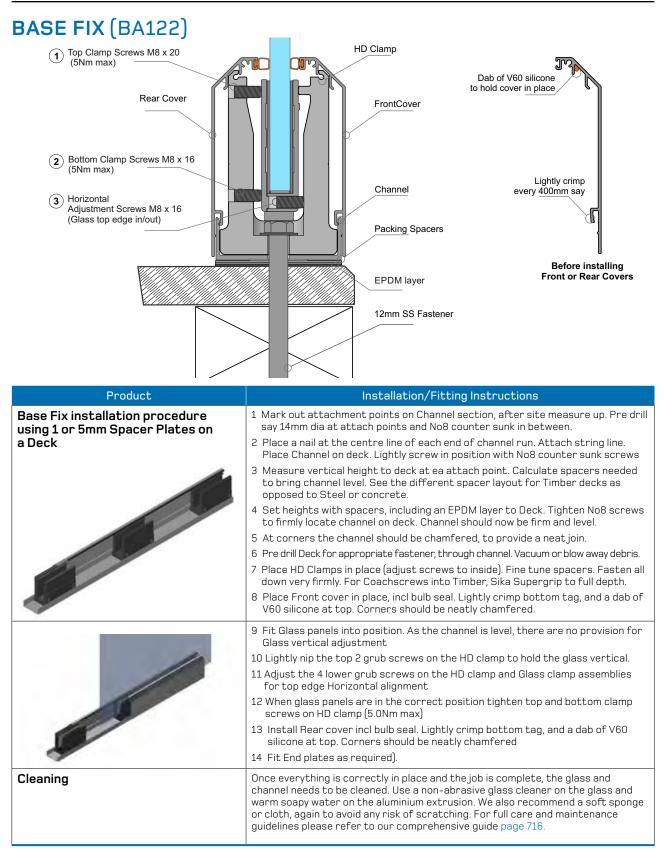
Product	Installation/Fitting Instructions
Side Fix installation procedure using 15mm Spacer Plate on Boundary	1 Attach a 15mm Spacer Plate to the boundaryjoist at each end of the balustrade section. EPDM or rubber membrane between Timber and Spacer
Joists	2 Run string line between these two Spacers Plates on the top edge of the Spacers.
Fitting Stages 1–6 to get HD Clamp Plumb, both Vertical and Horizontal	3 Mark out position of intermediate Spacer Plates (will be the same spacing as the Heavy Duty clamps) and screw to joists using 10g SS Screws. EPDM or rubber membrane between Timber and Spacer. Use clamp spacings as listed on fixing details. Note that glass joins are usually made at the HD clamps.
	4 Run string line between the spacers on the front face. This will determine if the joists are warped. Calculate the position and quantity of 1.0mm thick Packing spacers to packout the 15mm Spacer Plates as necessary. Do not fit at this stage.
	5 Temporarily fit Rear cover and mark out position of 12.5mm holes for 12mm coach screw/bolts. Drill holes. Fit bulb seal on back cover.
	6 Fit Rear cover and HD clamps in position with the 12mm fasteners. Prior to tightening up fit the 1.0mm Packing spacers as previously determined between the 15mm Spacers Plates and the Rear cover extrusion. Tighten up the 12mm fasteners, while ensuring the Rear Cover is plumb.
	7 Mark out position of Glass clamps on glass to match position of HD clamps and tighten on glass.
	8 Fit glass into position on HD clamps.
Fitting Stages 9–11 to get Glass Plumb, both Vertical and Horizontal	9 Adjust the Vertical height grub screw on the bottom of the HD clamp to ensure the top edges of the glass panels are level
	10 Lightly nip the top 2 grub screws on the HD clamp to hold the glass vertical.
	11 Adjust the 4 lower grub screws on the HD clamp and Glass clamp assemblies for top edge Horizontal alignment
	12 When glass panels are in the correct position tighten top and bottom clamp screws on HD clamp (5.0Nm max).
	13 Cut Front cover to length and fit bulb seal
	14 Clip Front cover on
	15 Fit End plate kits as required.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



INFINITY BALUSTRADE SYSTEM

Installation / Fitting Instructions



IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



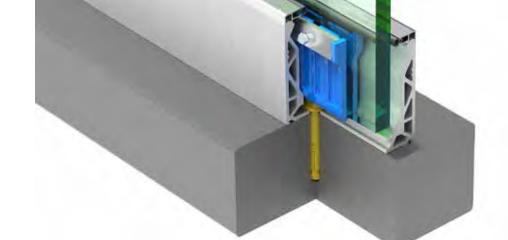
1

PosiGlaze System (Base and Side Fix)

17-1

The PosiGlaze System was developed for cantilevered structural balustrades to cope with the transition from monolithic Toughened Safety Glass (TSG) to Toughened Laminated Safety Glass (TLSG). The unique design uses a special high strength hollow core aluminium extrusion and special glass clamp kits that secure and locate the glass into the aluminium section. This means the system can be used on 12 0 15mm TEMPAFLOAT® TSG; 15.2, 17.2, 0 19.2 TLSG with SAFELITE® EVA Interlayer; and 13.52, 17.52 0 21.52 TLSG with SAFELITE® STF (Sentry®) Interlayer; without holes in the glass.

- FULLY ADJUSTABLE AFTER INSTALLATION PosiGlaze uses a unique, simple adjustment system allowing horizontal alignment of each glass panel.
- LIGHTWEIGHT AND EXTREMELY STRONG Cleverly designed out of extruded aluminium, saving weight yet keeping strength.
- ENGINEERED Our system has been engineered & tested to comply with the building regulations (with the appropriate fixing spacing and glass thickness) in both domestic and selected commercial installations. It can be installed in a wide variety of applications.



Key Features

- The PosiGlaze System can be base fixed (top) or side fixed (face) mounted.
- PosiGlaze's clever locating and adjusting technique allows installers to adjust the glass panels once in place, with a turn of a spanner, saving on installation time.
- Simple to install align and adjust.
- Hydraulic Pool Gate & Panel Clip Hardware, is available to suit pool balustrade applications. (Refer to Frameless Pool Fences, Gates and Wind Break Screen Section for specific design notes: Section 7, page 496).

Material Finish

- The sections and covers are fully anodisied to 20 microns for durability and come standard in a unique brushed anodised finish which give a 'Stainless Steel Effect'.
- Powdercoated upon request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.
- Important instructions Attachment to structures;
 - An EPDM or similar material spacer must be used to separate all aluminium items from all timber, concrete and steel structures. Failure to do so can lead to the chemicals in the structure affecting the surface finish on the aluminium.
- All fixings must be Stainless Steel.

Occupancy Type

- Suitable for occupancy types A, B, E, C3, C1/C2, D (subject to glass & fixing type)
- Occupancy types as per AS/NZ 1170.1.2002.

Windzone

- Exceeds the wind loading for all Wind Zones up to and including Extra High Wind Zone as set out in NZS 3604:2011
- Max design Wind pressure subject to glass type and fixing method.

The system is glazed with Metro Performance Glass, as follows:

- TEMPAFLOAT® 12mm 8 15mm nominal thickness, monolithic toughened safety glass (TSG) with interlinking rail.
- SAFELITE® EVA 13.2mm, 15.2mm & 19.2mm nominal thickness, toughened laminated safety glass (TLSG) with stiffener brackets or interlinking rail.
- SAFELITE® STF (Sentry®) 13.52mm, 17.52mm & 21.52mm nominal thickness toughened laminated safety glass (TLSG) with rigid interlayer. Stiffener brackets or interlinking rail not required (provided minimum panel length requirements are satisfied).

Interlinking Rail

All monolithic toughened frameless glass balustrades must have an Interlinking Rail to conform to NZS 4223.3.2016, including the latest amendment of NZBC B1.

Compliance

Complies with AS/NZS 1170:2002, NZS 4223.3.2016, NZ Building Code B1, F2, F4 and F9.

Scope of Use

- PosiGlaze is the perfect choice for residential to light commercial installations where a frameless glass balustrade is desired.
- Our high specification glass clamping mechanism locks glass panels into position effortlessly with four immobilising fasteners, per meter of channel. Should the need arise, it remains possible to re-align or even remove individual panels after the initial installation has been completed.
- With the use of a trapezoidal adjustment mechanism it is possible to horizontally align each individual panel of glass to create an immaculate and seamless finish
- Where required, an interlinking top rail finishes off the system, producing a low profile modern look.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

SAFELITE® STF (Sentry®) glass layer types and nominal glass thickness orientation

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Outer Layer glass Thickness (Nominal mm)
13.52	6	1.52 Sentry®	6
17.52	8	1.52 Sentry®	8
21.52	10	1.52 Sentry®	10

An interlinking rail is not required when specifying SAFELITE® STF (Sentry®) interlayer. (minimum panel widths apply).
Note: Inner layer refers to the balcony side.



POSIGLAZE SYSTEM

BALUSTRADE SYSTEM KITS

Balustrade Solution 3m Clamp Kits (Domestic and Commercial Applications)

BASE FIX (PG120B)

* Doesn't include substrate fixings or end caps

Glass Thickness (Nominal) (System can Accommodate)

12-21.5mm Area (Ideally suited)

Internal D External





Model	Sizes mm	Finish	Material	Туре	Application		
	GLASS THICKNESS:			CHANNEL SYSTEM BASE FIX	POSIGLAZE BASE ANOD BRUSHED DRILLED KIT COMPRISES OF:		
500036	12mm	ANOD-BRUSHED	ALUM 6063 T6 – BRUSHED ANODISED TO 20 MICRONS		1 x 3m Base Drilled Channel		
500037	13.5mm	ANOD-BRUSHED		* Complete with seal strips, gaskets,	2 x 3m Top Clip Bead 1 x Clamp kit (consisting of 12		
500038	15mm	ANOD-BRUSHED		side cladding and	clamps) to suit specified glass		
500039	17.5mm	ANOD-BRUSHED		glass clamps	thickness		
500040	19mm	ANOD-BRUSHED			1 x Spanner 1 x Dowel Chanel Joiners (Pair)		
500041	21.5mm	ANOD-BRUSHED					
500248	12mm	MILL - FINISH	ALUM 6063 T6				
500401	13.5mm	MILL - FINISH			POSIGLAZE BASE MILL FINISH		
500409	15mm	MILL - FINISH			DRILLED KIT COMPRISES OF: 1 x 3m Base Drilled Channel		
500410	17.5mm	MILL - FINISH			1 x 3m Base Drilled Channel 1 x 3m Top Clip Bead		
500404	19mm	MILL - FINISH					1 x 3m Side Cladding
500405	21.5mm	MILL - FINISH				1 x Clamp kit (consisting of 12 clamps) to suit specified glass	
	OVERALL LENGTH = 3000mm	ON REQUEST: POWDERCOAT ANOD NATURAL	ST: PAT		thickness 1x Spanner 1 x Dowel Chanel Joiners (Pair)		

SIDE FIX (PG120S)

* Doesn't include substrate fixings or end caps

Glass Thickness (Nominal) (System can Accommodate) 12-21.5mm

Area (Ideally suited) Internal & External







Model	Sizes mm	Finish	Material	Туре	Application
	GLASS THICKNESS:			CHANNEL SYSTEM SIDE FIX	POSIGLAZE SIDE ANOD BRUSHED DRILLED KIT COMPRISES OF:
500042	12	ANOD-BRUSHED	ALUM 6063 T6 – BRUSHED ANODISED TO 20 MICRONS		1 x 3m Side Drilled Channel
500043	13.5	ANOD-BRUSHED		* Complete with seal strips, gaskets,	1 x 3m Top Clip Bead 1 x 3m Side Cladding
500044	15	ANOD-BRUSHED		side cladding and	1 x Clamp kit (consisting of 12 clamps)
500045	17.5	ANOD-BRUSHED		glass clamps	to suit specified glass thickness 1 x Spanner
500046	19	ANOD-BRUSHED			1 x Dowel Chanel Joiners (Pair)
500047	21.5	ANOD-BRUSHED			
500249	12	MILL - FINISH	ALUM 6063 T6		POSIGLAZE SIDE MILL FINISH
500416	13.5	MILL - FINISH			DRILLED KIT COMPRISES OF:
500418	15	MILL - FINISH			1 x 3m Side Drilled Channel 1 x 3m Top Bead
500419	17.5	MILL - FINISH			1 x 3m Side Cladding
500421	19	MILL - FINISH			1 x Clamp kit (consisting of 12 clamps) to suit specified glass
500422	21.5	MILL - FINISH			thickness
	OVERALL LENGTH = 3000mm	ON REQUEST: POWDERCOAT ANOD NATURAL			1 x Spanner 1 x Dowel Chanel Joiners (Pair)



BALUSTRADE SYSTEM KITS

Balustrade Solution 3m Clamp Kits (Domestic and Commercial Applications)

ANGLED SIDE FIX (PG180S)

* Doesn't include substrate fixings or end caps

Glass Thickness (Nominal) (System can Accommodate) 12-21.5mm

Area (Ideally suited)

Internal & External



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	WARE



Model	Sizes mm	Finish	Material	Туре	Application
	GLASS THICKNESS:			CHANNEL SYSTEM SIDE FIX	POSIGLAZE SIDE ANOD BRUSHED DRILLED KIT COMPRISES OF:
500048	12mm	ANOD-BRUSHED	ALUM 6063 T6 - *	* Complete with seal	1 x 3m Side Drilled Channel
500049	13.5mm	ANOD-BRUSHED	BRUSHED	ANODISED TO side cladding and	1 x 3m Top Clip Bead 1 x 3m Side Cladding
500050	15mm	ANOD-BRUSHED	20 MICRONS		1 x Clamp kit (consisting of 12
500051	17.5mm	ANOD-BRUSHED			clamps) to suit specified glass thickness
500052	19mm	ANOD-BRUSHED			1 x Spanner
500053	21.5mm	ANOD-BRUSHED			1 x Dowel Chanel Joiners (Pair)
500424	12mm	MILL - FINISH	ALUM 6063 T6		POSIGLAZE SIDE MILL FINISH
500425	13.5mm	MILL - FINISH			DRILLED KIT COMPRISES OF:
500427	15mm	MILL - FINISH			1 x 3m Side Drilled Channel 1 x 3m Top Bead
500428	17.5mm	MILL - FINISH			1 x 3m Side Cladding
500430	19mm	MILL - FINISH			1 x Clamp kit (consisting of 12 clamps) to suit specified glass
500431	21.5mm	MILL - FINISH			thickness
	OVERALL LENGTH = 3000mm	ON REQUEST: POWDERCOAT ANOD NATURAL			1 x Spanner 1 x Dowel Chanel Joiners (Pair)





Individual Parts – PosiGlaze

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
BASE DRILLED	300341	3000mm	ANOD-BRUSHED	ALUM 6063 T6 -	BASE DRILLED	BALUSTRADE	Internal &	
CHANNEL		GLASS THICKNESS: 12-21.5mm EXTRUSION SIZE: 72 x 119.5mm	ON REQUEST: POWDERCOAT	BRUSHED ANODISIED TO 20 MICRONS	CHANNEL	CHANNEL SYSTEM COMPONENT	External	
SIDE DRILLED	300342	3000mm	ANOD NATURAL	ALUM 6063 T6 -	SIDE DRILLED	BALUSTRADE	Internal &	
CHANNEL		GLASS THICKNESS: 12-21.5mm EXTRUSION SIZE: 74.5 x 119.5mm		BRUSHED ANODISIED TO 20 MICRONS	CHANNEL	CHANNEL SYSTEM COMPONENT	External	
TOP SEAL STRIP	301348	3000mm	ANOD-BRUSHED	ALUM 6063 T6 -	TOP SEAL	BALUSTRADE	Internal &	
	301349	3000mm	MILL - FINISH	BRUSHED	STRIP	SYSTEM	External	
*Doesn't include bulb seal, please refer to Bulb Seal Gasket section for respective glass thicknesses			ON REQUEST: POWDERCOAT ANOD NATURAL	ANODISIED TO 20 MICRONS	*The top seal strip holds the gasket and is pressed onto the channel at the end of the installation. Covers the clamps from and prevents debris from entering the channel.	COMPONENT	ს∰_	
SIDE CLADDING	300419	3000mm	ANOD-BRUSHED	ALUM 6063 T6 -	SIDE	BALUSTRADE	Internal &	
	300420	3000mm	MILL - FINISH	BRUSHED ANODISIED TO	CLADDING	SYSTEM COMPONENT	External	
-			ON REQUEST: POWDERCOAT ANOD NATURAL	20 MICRONS	*As with the top seal strip it holds the gasket in place and covers the clamps from view. To be used with side drilled channel to cover the drill holes from view. Requires adhesive to hold flat surface against channel.		J\$ ₩ \$	
воттом	300417	3000mm	ANOD-BRUSHED	ALUM 6063 T6 -	воттом		BALUSTRADE	Internal &
CLADDING	300418	3000mm	MILL - FINISH	BRUSHED ANODISIED TO	CLADDING	SYSTEM COMPONENT	External	
			ON REQUEST: POWDERCOAT ANOD NATURAL	20 MICRONS the side fixed channel if required, gives an angled finish to the bottom of the channel. Clips into the groves under the channel, will require adhesive for securing in place.			ას∰⊡	
GLASS CLAMP	300358	12mm	BLACK	PLASTIC	GLASS CLAMP	BALUSTRADE	Internal &	
	300359	13.5mm	BLACK		*The clamps can fit	SYSTEM COMPONENT	External	
- Find	300360	15mm	BLACK		glass thicknesses 1mm either way of nominal glass			
	300361	17.5mm	BLACK		thickness i.e. 15mm glass clamps will		ر <u>ب</u>	
- m - m	300362	19mm	BLACK		suit 14 16mm glass. Included are the		ິ ໂ	
	300363	21.5mm	BLACK		clamp bars, which sit into the top		٩	
*Each kit contains 12 clamps (inc. Clamps, x2 3m lengths bulb gasket, bars, bolts)					mould of the clamps and the clamp bolts, which screw into the bars and are then undone to hold the glass in place. These are undone and tightened each side allowing the glasse alignment. 6m gasket to suit glass			
					thickness.			



Individual Parts – PosiGlaze

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
DOWEL (CHANNEL JOINERS)	300860	30x9mm Dia	ANOD-BRUSHED	ALUM 6063 T6 - BRUSHED	CHANNEL JOINER	BALUSTRADE SYSTEM	Internal & External
1				ANODISIED	*The dowels are	COMPONENT	
100					used to allow for better aligning when joining channel		. <u></u>
					sections together.		ရှိ
*Sold as a pair		(204002)					0
END CAPS	300505	(PG120B) Base Fix	ANOD-BRUSHED	ALUM 6063 T6 - BRUSHED	END CAP	BALUSTRADE SYSTEM	Internal & External
1	300507	(PG120S) Side Fix	ANOD-BRUSHED	ANODISIED TO 20 MICRONS	*Stainless steel end caps cut to suit each option.	COMPONENT	
	300508	(PG180S) Face Fix LH	ANOD-BRUSHED		An adhesive will need to be used to hold them in place.		ا ل
	300509	(PG180S) Face Fix RH	ANOD-BRUSHED				ရှိ
	300504	(PG120B) Base Fix	MILL - FINISH				5
4	300506	(PG120S) Side Fix	MILL - FINISH				
	300503	(PG180S) Face Fix LH	MILL - FINISH				
CUSTOM END CAPS	300510	1000 (L) x 72 x 1.2mm	ANOD-BRUSHED				
	300511	1000 (L) x 74 x 1.2mm	ANOD-BRUSHED				
		*For Stairs and angled cuts of Posi-Glaze Channel	ON REQUEST: POWDERCOAT ANOD NATURAL				
			ANOD NATORAL				
SPANNER	301424	Angled adjustment spanner	BLACK	STEEL	SPANNER *Steel spanner with angle to reach	BALUSTRADE SYSTEM COMPONENT	Internal & External
					the clamp bolts to tighten/loosen the glass.		
							ရှိ
BULB SEAL	301346	12- 17.5mm	BLACK	RUBBER	BULB SEAL	BALUSTRADE	Internal &
GASKET	301347	19- 21.5mm	BLACK		*Extra bulb seal gasket can be	SYSTEM COMPONENT	External
		*Sold as per (m) Length			supplied in any length. The small		
					bulb seal gasket suits 19 - 21mm glass, the large bulb seal gasket suits 12		
					- 17.5mm glass.		_ال
GASKET	300610	80 x 80 x 0.8mm	BLACK	FIBRE	CLAMP KIT GASKET	BALUSTRADE SYSTEM	Internal 8 External
						COMPONENT	
							شی
							ရှို
	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK	BALUSTRADE	Internal &
LOCTITE 243					ADHESIVE	LINK RAIL COMPONENT	External
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2000							္သည္။
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Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
90 DEGREE STIFFENER BRACKET (GLASS TO WALL)	300153	65x55x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
	300154	65x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
90 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300151	75x50x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
	300152	88x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				ال ال
180 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300149	70x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
26	300150	103x25mm GLASS THICKNESS: 17.5-21.5mm	SS				₩ N N

NOTE: All brackets are supplied with a selection of gaskets to suit glass thickness.



S25 Link Rail



- 25 x 21mm 2205 Stainless Steel.
- Suitable for 10mm or 12mm Glass Thickness.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel finish standard, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL	300738	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
R		GLASS THICKNESS: 10-12mm OVERALL SIZE: 25 x 21mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	
S25 LINK RAIL WALL BRACKET	300118	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
(LEFT HAND)			ON REQUEST: POWDERCOAT	STEEL	STEEL BRACKET	LINK RAIL COMPONENT	
S25 LINK RAIL	301854	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	





S25 Link Rail



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL VERTICAL ADJUSTABLE JOINER	300863	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300862	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S25 LINK RAIL FIXED 90 DEGREE CORNER	300861	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL INLINE JOINER	300864	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	INLINE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 END CAP	300512	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	END CAP	BALUSTRADE LINK RAIL COMPONENT	Internal 0 External
LINK RAIL LOCTITE 243	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL RUBBER GASKET	302091	Suits S25 Rail PER METRE LENGTH GLASS THICKNESS: 12mm	BLACK	RUBBER	RUBBER GASKET FOR S25 LINK RAIL	BALUSTRADE LINK RAIL COMPONENT	Internal & External
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS STEEL	GRUB SCREW	BALUSTRADE LINK RAIL FIXING	Internal & External



S40 Link Rail



- 40 x 30mm 2205 Stainless Steel.
- Suitable for 12mm 21.5mm Glass Thickness.
- Rubber gasket available to suit respective glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel standard finish, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	300739	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 12 – 21.5mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
		OVERALL SIZE: 40 x 30mm					
S40 LINK RAIL	300156	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)			ON REQUEST: POWDERCOAT	STEEL BRACKET	LINK RAIL COMPONENT		
S40 LINK RAIL	301855	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	



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S40 Link Rail



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	300868	Suits S40 Rail	SS	2205 STAINLESS	ADJUSTABLE	BALUSTRADE	Internal &
VERTICAL ADJUSTABLE JOINER			ON REQUEST: POWDERCOAT	STEEL	VERTICAL JOINER	LINK RAIL COMPONENT	External
S40 LINK RAIL HORIZONTAL	300867	Suits S40 Rail	SS	2205 STAINLESS	ADJUSTABLE	BALUSTRADE	Internal &
ADJUSTABLE JOINER			ON REQUEST: POWDERCOAT	STEEL	HORIZONTAL JOINER	LINK RAIL COMPONENT	External
							
S40 LINK RAIL FIXED 90 DEGREE	300866	Suits S40 Rail	SS	2205 STAINLESS	90 DEGREE	BALUSTRADE	Internal &
CORNER			ON REQUEST: POWDERCOAT	STEEL	CORNER CONNECTOR	LINK RAIL COMPONENT	External
S40 LINK RAIL	300869	Suits S40 Rail	SS	2205 STAINLESS	INLINE JOINER	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
S40 END CAP	300513	Suits S40 Rail	SS	2205 STAINLESS	END CAP	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
LINK RAIL	300961	Suits S40 Rail	ADHESIVE	50MM BOTTLE	TUBE LOCK	BALUSTRADE	Internal &
					ADHESIVE	LINK RAIL COMPONENT	External
S40 LINK RAIL	302092	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
RUBBER GASKET		PER METRE LENGTH GLASS THICKNESS: 12-13.5mm			GASKET FOR S40 LINK RAIL	LINK RAIL COMPONENT	External
S40 LINK RAIL	302093	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
RUBBER GASKET		PER METRE LENGTH GLASS THICKNESS: 12-15mm			GASKET FOR S40 LINK RAIL	LINK RAIL FIXING	External



S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
S40 LINK RAIL	302094	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &	
RUBBER GASKET		PER METRE LENGTH				LINK RAIL COMPONENT	External	
		GLASS THICKNESS: 13-16mm						
S40 LINK RAIL	302095	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &	
RUBBER GASKET		PER METRE LENGTH			GASKET FOR S40 LINK RAIL	LINK RAIL COMPONENT		External
		GLASS THICKNESS: 16-19mm						
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS	GRUB SCREW	BALUSTRADE	Internal &	
(STEEL		LINK RAIL FIXING		

POSIGLAZE SYSTEN

BALUSTRADE RAIL SYSTEM

Edgetec[®] 220 Link Rail



Aluminium LinkRail 38x30mm – For 12mm and 15mm Glass

- 38 x 30mm Aluminium Link Rail.
- Available in Natural Anodisied Finish 20 microns as standard or Silver Frost powdercoat. Special colours on request (Powdercoating or Anodising).
- Rubber gasket available to suit 12mm or 15mm glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.



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BALUSTRADE RAIL SYSTEM



Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	300728	5800mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
	300729	5800mm	SILVER FROST			LINK RAIL	External
FULL LENGTH	300727	5800mm	MILL FINISH				
		GLASS THICKNESS: 12-15mm	ON REQUEST: POWDERCOAT				
		OVERALL SIZE: 38 x 30mm					
EDGETEC® 220	300725	2900mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL HALF LENGTH	300726	2900mm	SILVER FROST			LINK RAIL	External
HALF LENGTH	300724	2900mm	MILL FINISH				
		(Half Length) GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	300593	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 12mm		NUBBEN	GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT	
EDGETEC® 220	300594	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 15mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT *For a 5.8m Link Rail x2 rubber gaskets lengths are required	External
EDGETEC [®] 220	300847	80x22.8x5mm	MILL	ALUM 6063	180 DEGREE	BALUSTRADE	Internal &
LINK RAIL INLINE JOINER					STRAIGHT JOINER	LINK RAIL COMPONENT	External
EDGETEC® 220	300848	50x50x5mm	MILL	ALUM 6063	90 DEGREE	BALUSTRADE	Internal &
LINK RAIL 90 DEGREE JOINER					CORNER JOINER	LINK RAIL COMPONENT	External
EDGETEC® 220	300493	38.4 x 30.4mm	ANOD – Natural	ALUM 6063	END CAP	BALUSTRADE	Internal &
END CAP	300494	38.4 x 30.4mm	SILVER FROST				External
	300492	38.4 x 30.4mm	MILL			COMPONENT	
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220 LINK RAIL FIXED 90 DEGREE	301985	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External
CORNER	301986	Suits Edgetec® 220 Rail	MILL				
A		(Component)	ON REQUEST: POWDERCOAT				



Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	301987	Suits Edgetec®	SILVER FROST	ALUM 6063	ADJUSTABLE	BALUSTRADE	Internal &
LINK RAIL HORIZONTAL		220 Rail Suits Edgetec®		-	HORIZONTAL JOINER	LINK RAIL COMPONENT	External
ADJUSTABLE JOINER	301988	220 Rail	MILL	-	00m2m		
		(Component)	ON REQUEST: POWDERCOAT				(#)
6-1-			TOWDERCOAL				
EDGETEC® 220	301989	Suits Edgetec®	SILVER FROST	ALUM 6063	ADJUSTABLE	BALUSTRADE	Internal &
LINK RAIL	301383	220 Rail Suits Edgetec®	SILVERFRUST		VERTICAL	LINK RAIL	External
ADJUSTABLE JOINER	301990	220 Rail	MILL		JOINER	COMPONENT	
JOINTEN		(Component)	ON REQUEST: POWDERCOAT				<u>بچا</u>
LE			FOWDERCOAT				
EDGETEC [®] 220	301003	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)	301004	120 x 45mm	MILL]	BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec®	ON REQUEST:			*For attaching	
		220 Řail (Component)	POWDERCOAT			to posts or structures	
EDGETEC® 220	301005	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)	301006	120 x 45mm	MILL	-	BRACKET	LINK RAIL COMPONENT	External
1		Suits Edgetec® 220 Rail	ON REQUEST: POWDERCOAT			*For attaching	
		(Component)	1 OWDERIOOAR			to posts or structures	s and a second s
	301002	100 x 65mm	SILVER FROST				
EDGETEC® 220 WALL BRACKET	301149	100 x 65mm	MILL	ALUM 6063	WALL BRACKET	BALUSTRADE LINK RAIL	Internal & External
POST END MOUNT		Suits Edgetec®	ON REQUEST:	-		COMPONENT	
all "		220 Rail (Component)	POWDERCOAT			*For attaching to posts or	الله
		(componency				structures	
EDGETEC [®] 220 WALL BRACKET	301991	60 x 46mm	SILVER FROST	ALUM 6063	POST END MOUNT FOR	BALUSTRADE LINK RAIL	Internal & External
*Suits AP65 Series	301992	60 x 46mm	MILL	-	AP65	COMPONENT	
Aluminium Post		Suits Edgetec® 220 Rail	ON REQUEST: POWDERCOAT			*For attaching	
1-1		(Component)				to posts or structures	ŝ
SCREW	301993	6G x 1/4" Sq	SS	304 STAINLESS	SCREW	PAN HEAD	Internal &
		GLASS		STEEL		SCREW	External
		THICKNESS: 12mm, 15mm				COMPONENT 300847	
Communities		12				300848 301985	s and a second s
						301986 301003 301004	
						301005 301006	
						301002 301149	
						301991 301992	
SILCONE – STRUCTURAL	300011	V60	ADHESIVE	CARTRIDGE	SILCONE	FIXING	Internal &
GLAZING						COMPONENT	External





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BALUSTRADE FIXING COMPONENTS – BASE FIX PG120B

Concrete and Steel Substrates (Domestic and Commercial Applications)

CONCRETE FIXING – BASE FIX

A, B, E, C3 OCCUPANCY TYPE



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
THREADED ROD FOR CHEMICAL ANCHOR	500255	M10 x 110mm Threaded Rod M12 x 24 x 2.5mm Washer (Round) M10 Nut	SS	316 STAINLESS STEEL	THREADED ROD / WASHER / NUT	FIXING COMPONENT	Internal 8 External
HILTI HIT-HY 200 MAX CHEMICAL ANCHOR	300003	330ml	ADHESIVE	CARTRIDGE	CHEMICAL ANCHOR		

CONCRETE FIXING – BASE FIX C1/C2, D OCCUPANCY TYPE



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
THREADED ROD FOR CHEMICAL ANCHOR	500256	M12 x 125mm Threaded Rod M12 x 24 x 2.5mm Washer (Round) M12 nut	SS	316 STAINLESS STEEL	THREADED SLEEVE / WASHER / HEX SCREW	FIXING COMPONENT	Internal ပ External ဆြ
HILTI HIT-HY 200 MAX CHEMICAL ANCHOR	300003	330ml	ADHESIVE	CARTRIDGE	CHEMICAL ANCHOR		5

STEEL FIXING – BASE FIX

ALL OCCUPANCY TYPES



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
_ HEX SCREW	500257	M10 x 35mm	SS	316 STAINLESS STEEL	HEX SCREW / WASHER /	FIXING	Internal &
	501267	M10 x 40mm	SS	SIEEL	NUT	COMPONENT	External
	501268	M10 x 50mm	SS				
*Check length for application		INCLUDES: X2 M12 x 24 x 2.5mm Washer (Round) M10 Nut					မ္လာသို



BALUSTRADE FIXING COMPONENTS – SIDE FIX PG120S/PG180S

Concrete, Steel and Timber Substrates (Domestic and Commercial Applications)

CONCRETE FIXING – SIDE FIX

ALL OCCUPANCY TYPES

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
THREADED ROD FOR CHEMICAL ANCHOR	500255	M10 x 190mm Threaded Rod M12 x 24 x 2.5mm Washer (Round) M10 Nut	SS	316 STAINLESS STEEL	THREADED ROD / WASHER / NUT	FIXING COMPONENT	Internal 8 External
HILTI HIT-HY 200 MAX CHEMICAL ANCHOR	300003	330ml	ADHESIVE	CARTRIDGE	CHEMICAL ANCHOR		

STEEL FIXING – SIDE FIX

ALL OCCUPANCY TYPES

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
_ HEX SCREW	500257	M10 x 35mm	SS	316 STAINLESS	HEX SCREW	FIXING	Internal &
	501267	M10 x 40mm	SS	STEEL	/ WASHER / NUT	COMPONENT	External
	501268	M10 x 50mm	SS				
*Check length for application		INCLUDES: X2 M12 x 24 x 2.5mm Washer (Round) M10 Nut					± ∰ ¶P

TIMBER FIXING – SIDE FIX

A, B, E, C3, C1/C2, D OCCUPANCY TYPE



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
COACH SCREW	500632	M10 x 120mm Coach Screw M10/12x24x2.5mm Washer (Round)	SS	316 STAINLESS STEEL	COACH SCREW /WASHER		ეწ∰_[
HEX BOLT	500259	M10 x 130mm Hex Bolt M12 x 24 x 2.5mm Washer (Round) M12 Washer 50 x 50mm x 5mm (Square) M10 Nut	SS	316 STAINLESS STEEL	HEX BOLT WASHER / NUT		J\$∰][

ARDWARE ARRANTY



BALUSTRADE FIXING INDIVIDUAL COMPONENTS

Fixings: Rods, Anchors, Screws, Washers, Nuts

To suit Concrete, Steel and Timber Substrates (Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
M10 x 110mm	301500	M10 x 110mm	SS	316 STAINLESS	THREADED	FIXING	Internal &
THREADED ROD				STEEL	ROD	COMPONENT	External
							ع
HILTI HIT-HY 200	300003	330ml	ADHESIVE	CARTRIDGE	CHEMICAL	FIXING	Internal &
MAX CHEMICAL ANCHOR					ANCHOR	COMPONENT	External
11							
							ျို
WASHER		M12x24x		316 STAINLESS	WASHER	FIXING	Internal &
M12X24X2.5	301603	2.5mm	SS	STEEL		COMPONENT	External
							ျို
M10 NUT	301025	M10 Nut	SS	316 STAINLESS	NUT	FIXING	Internal &
				STEEL		COMPONENT	External
							್ರಿ
M10 HEX SCREW	301303	M10 x 35mm	SS	316 STAINLESS	HEX SCREW	FIXING	Internal &
-	301880	M10 x 40mm	SS	STEEL		COMPONENT	External
	302013	M10 x 50mm	SS				
							ျို
HEX SCREW	301305	M12 x 35mm	SS	316 STAINLESS	HEX SCREW	FIXING	Internal &
M12 X 35MM				STEEL		COMPONENT	External
							ના
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							0
M12 NUT	301028	M12 Nut	SS	316 STAINLESS STEEL	NUT	FIXING COMPONENT	Internal & External
							S S
							_ ا



BALUSTRADE FIXING INDIVIDUAL COMPONENTS

Fixings: Rods, Anchors, Screws, Washers, Nuts

To suit Concrete, Steel and Timber Substrates (Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Material	Tupo	Application	Area
				1	Туре	Application	
M10 COACH SCREW	301837	M10 x180mm	SS	316 STAINLESS STEEL	COACH	FIXING	Internal &
SCHEW	301926	M10 x 120mm	SS	STEEL SCREW	SCREW	COMPONENT	External
C							 اللل
M12 WASHER 50MM X50MM	302098	M12 Washer 50 x 50 x 5mm	SS	316 STAINLESS STEEL	WASHER	FIXING COMPONENT	Internal 8 External
Х5ММ				UTEL			J\$ \$} \$}
M10 HEX BOLT	300528	M10 x 240mm	SS	316 STAINLESS	HEX BOLT	FIXING	Internal &
-	300527	M10 x 130mm	SS	STEEL		COMPONENT	External
							J\$∰ []



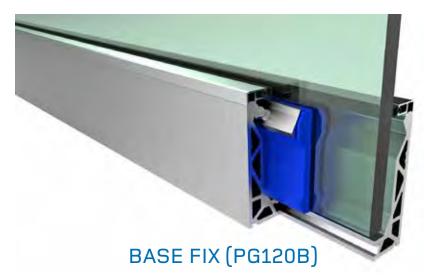
POSIGLAZE SYSTEM

Side and Base Fix 3D Imagery



SIDE FIX (PG120S)







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Design Tables

Base Fix PG120B

SAFELITE® toughened laminated safety glass and TEMPAFLOAT® monolithic toughened safety glass. Steel and concrete only. Not suitable for timber.

Glass		Maximum	Channel Fixing	Design loads to deck structure			e
Thickness t (mm)	ness Occupancy Design Height H (mm)	Spacing (mm) Max	M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)	
	А	1150	400	1.04	12.94	-	-
12, 13.52,15.2, 15, 17.52 8 17.2	C3/B/E	1000 1100 1150	400 400 400	1.13 1.24 1.29	14.06 15.47 16.17	1.51 1.37 1.31	2.25 2.05 1.96
19.2	C3/B/E	1220	200	1.37	8.58	1.24	1.84
15, 17.52	C3/B/E	1250	200	1.41	8.79	1.21	1.80
21.52	C1/C2/D	1250	200	2.81	17.58	2.41	3.60

Side Fix PG120S & PG180S

SAFELITE® toughened laminated safety glass and TEMPAFLOAT® monolithic toughened safety glass. Steel, concrete and timber.

Glass		Maximum Channel Fixing Design loads to			esign loads to	deck structure	
Thickness t (mm)	Occupancy	Design Height H (mm)	n) Spacing (mm) Max	M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
	А	1030	400	0.93	8.48	-	-
12, 13.52,15.2, 15, 17.52 & 17.2	C3/B/E	1030 (concrete/steel) 1030 (timber)	400 200	1.33 1.33	13.33 6.67	1.68 1.68	2.50 2.50
19.2	C3/B/E	1100 ¹	200	1.41	6.96	1.56	2.32
17.52	C3/B/E	1130 (concrete/steel)	200	1.44	7.09	1.51	2.26
21.52	C1/C2/D	1130 (concrete/steel)	200	2.88	14.18	3.02	4.51

Note: 1) Maximum design height (H) for fixing to timber is 1050mm.

2) Balustrades for C1, C2 & D Occupancy are not suitable for fixing to timber.

Base Fix Free Standing Pool Fences

(Not protecting a fall of 1.0m or more). Steel and concrete only. Not suitable for timber.

Glass Thickness	NZS3604 Wind Substrate Maximum Channel Fixing Design Height H (mm)			loads to deck ructure		
t (mm)	mm) Zone Design He	Design neight n (ninn)	Max	M* (kNm/m)	T* (kN)	
12	Up to High	Concrete, Steel	1220	400	0.86	10.75
15	Very High	Concrete, Steel	1220	200	1.11	6.94
17.52	Extra High	Concrete, Steel	1220	200	1.34	8.38

Side Fix Free Standing Pool Fences

(Not protecting a fall of 1.0m or more). Steel, Concrete and Timber.

Glass Thickness			Maximum Design Height H (mm)	Channel Fixing Spacing (mm)	Design loads to deck structure	
t (mm)	t (mm) Zone	Design Reight R (mm)	Max	M* (kNm/m)	T* (kN)	
12	Up to High	Concrete, Steel, Timber	1220	400	1.01	9.75
15	Very High	Concrete, Steel, Timber	1220	200	1.30	6.27
17.52	Extra High	Concrete, Steel	1220	200	1.57	7.58



Design Tables

Glass thickness key:

Glass	Inner layer ³	latarlayan thislanaa	Outer layer	Panel siz	ze requirements
Thickness t (mm)	glass thickness (mm)	Interlayer thickness (mm) and type	glass thickness (mm)	Minimum panel width (mm)	Maximum panel width (mm)
12	-	-	-	1000	1700/1900 (see below)
13.52	6	1.52 SAFELITE® STF (Sentry®)	6	1700	Refer manufacturing limits
15.2	8	1.2 SAFELITE® EVA	6	1000	1700/1900 (see below)
15	-	-	-	1000	1700/1900 (see below)
17.52	8	1.52 SAFELITE® STF (Sentry®)	8	1100	Refer manufacturing limits
17.2	8	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)
19.2	10	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)
21.52	10	1.52 SAFELITE® STF (Sentry®)	10	1100	Refer manufacturing limits

Note: 3) Inner layer refers to balcony side.

Maximum panel widths for Interlinking Rail/Bracket systems:

Applies where barrier is protecting a fall of 1.0m or more.

Interlinking Rail System	Maximum panel width (mm)	Position
S25 S40 Edgetec®220	1700 1700/1900 1700/1900	on glass only HB50 bracket/on glass HB50 bracket/on glass
MFG SB Bracket on SAFELITE® only	1900	Max 200mm from top of glass

Post failure requirements:

Applies where barrier is protecting a fall of 1.0m or more.

Glass Type	Requirement
TEMPAFLOAT®	Interlinking rail required in all cases
SAFELITE® EVA	Interlinking rail or SB brackets required all cases
SAFELITE® STF (Sentry®)	No interlinking rail required, minimum panel widths apply

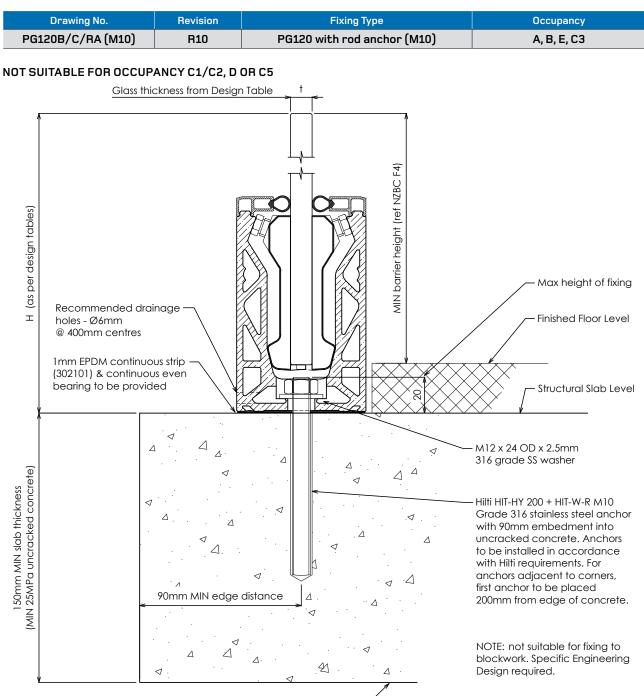
NOTES:

- Refer to elevation drawings for Height 'H'.
- The specifier must ensure the balustrade height above floor level requirements as per the NZ Building Code are complied with.
- Design loads are in accordance with AS/NZS 1170.1:2002 table 3.3 and NZBC B1/VM1 and DBH Guidance on Barrier Design (March 2012). M* & T* denote bending moment (kNm/m width) and tension loads (kN/connection) respectively to be supported by the deck/ pool structure.
- Capacity of all substructure is to be verified by building engineer or checked for accordance with NZS3604 (where applicable) prior to fixing. Fixing centres in tables above are applicable to concrete, steel and (where allowed) timber. Refer to fixing detail drawings for further details. All glass is to be toughened safety glass supplied by Metro Performance Glass, in either TEMPAFLOAT® Monolithic, SAFELITE® EVA Laminated or SAFELITE® STF (Sentry®) Laminated variants subject to requirements of the tables above.
- Glass & interlayer thicknesses shown are nominal thickness. Table is based on glass minimum tolerance as per NZS 4223.1:2008. Refer to the relevant fixing details on drawings: PG120B/C/RA(M10), PG120B/C/RA(M12), PG120B/S/BN, PG120S-180S/C/ RA(M10).
- PG120S-180S/C/RA(M12) and PG120S-180S/S/BN, PG120S-180S/T/BN, PG120S-180S/T/CS. Design table only valid for use with PosiGlaze balustrade system.
- SLS Deflection in this instance is above recommended limit of 30mm excluding rotation in the supporting structure. In all cases the posiglaze channel must be fixed with EPDM layer directly to the relevant supporting structure.
- For designs outside the scope of these tables and ULS wind pressures exceeding those shown, specific design is required.
- Minimum glass strength 100MPa, all edges polished. Maximum 10mm tolerance allowed to H heights noted in table. Monolithic glass options only applicable for situations where all parts of glazing are within 5000mm of adjacent lower floor/ground below. Pool fences listed above refer to free standing structures where safety from falling is not applicable, design is based on Importance Level 1.



POSIGLAZE PG120B BALUSTRADE SYSTEM

Concrete Fixing Detail



Concrete building structure to be designed by building engineer to -support loads as specified on PosiGlaze balustrade system design table.

Refer to PosiGlaze balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

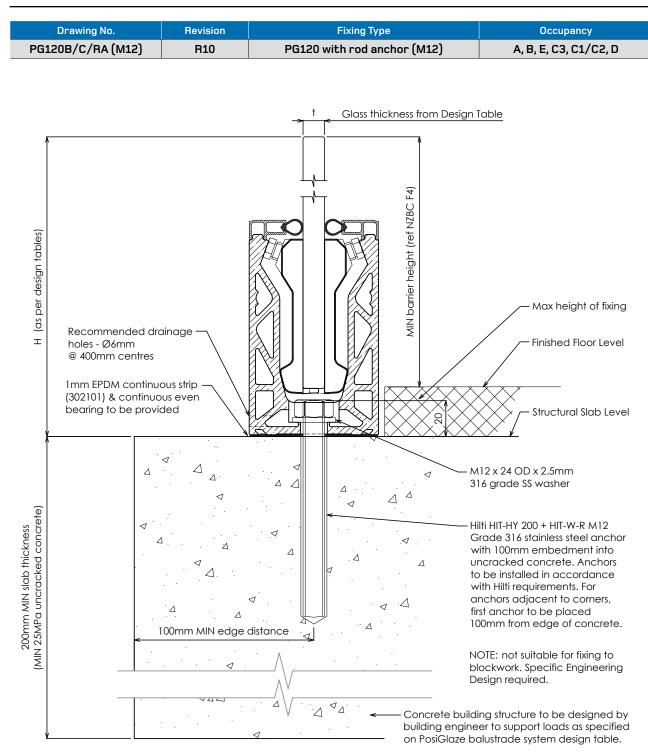
NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M*and T* specified on PosiGlaze balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with PosiGlaze balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) No substitution allowed any variation from the details above and design tables will require specific design.



POSIGLAZE PG120B BALUSTRADE SYSTEM

Concrete Fixing Detail



Refer to PosiGlaze balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

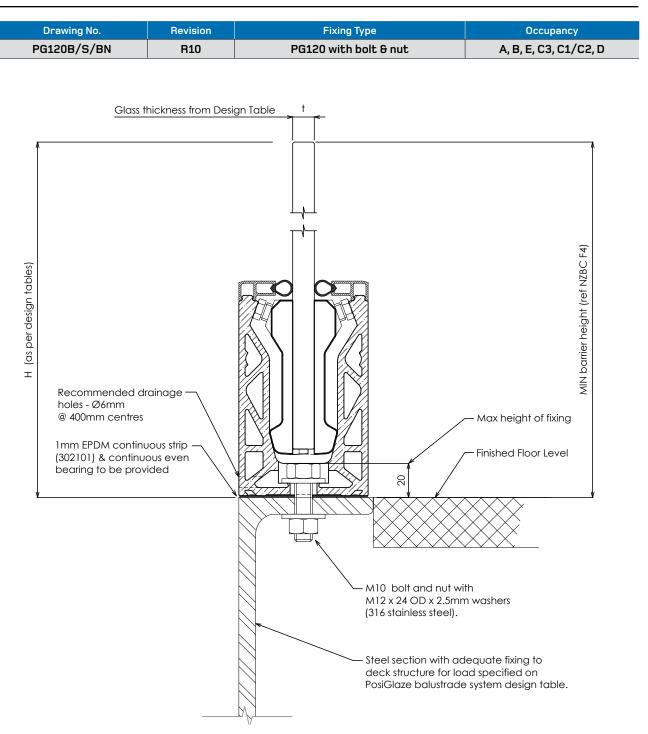
NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M*and T* specified on PosiGlaze balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with PosiGlaze balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) No substitution allowed any variation from the details above and design tables will require specific design.



POSIGLAZE PG120B BALUSTRADE SYSTEM

Steel Fixing Detail



Refer to PosiGlaze balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

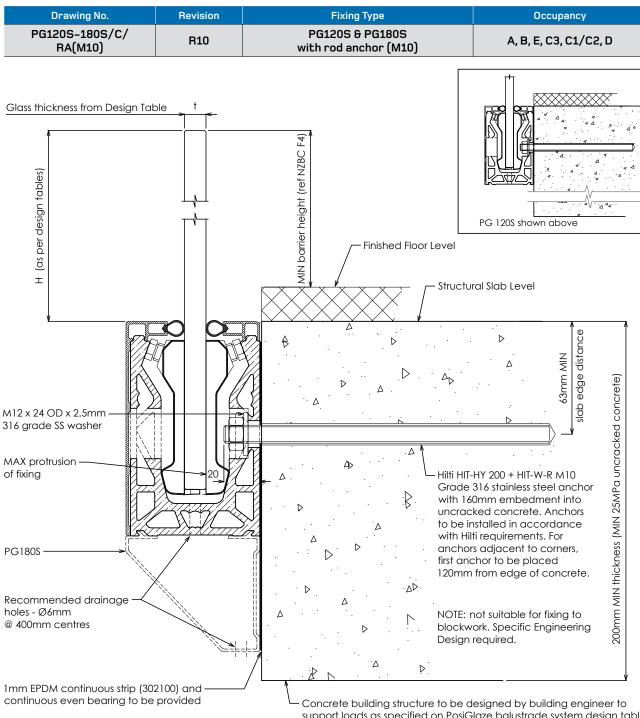
NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M*and T* specified on PosiGlaze balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with PosiGlaze balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) For fixing to steel substrates, the installer shall ensure the bolts are tightened to a "snug-tight" level as defined in NZS3404.
- 5) No substitution allowed any variation from the details above and design tables will require specific design.



POSIGLAZE PG120S & PG180S BALUSTRADE SYSTEM

Concrete Fixing Detail



support loads as specified on PosiGlaze balustrade system design table. Minimum 25MPa uncracked concrete, 200mm Min thickness.

Refer to PosiGlaze balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

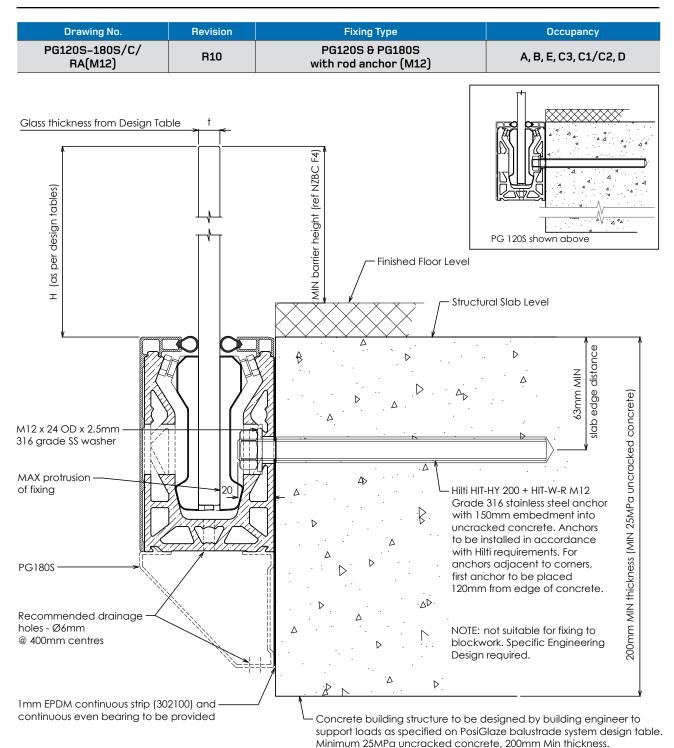
- 1) Capacity of structure is to be of sufficient strength to support loads M*and T* specified on PosiGlaze balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with PosiGlaze balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) No substitution allowed any variation from the details above and design tables will require specific design.



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POSIGLAZE PG120S & PG180S BALUSTRADE SYSTEM

Concrete Fixing Detail



Refer to PosiGlaze balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

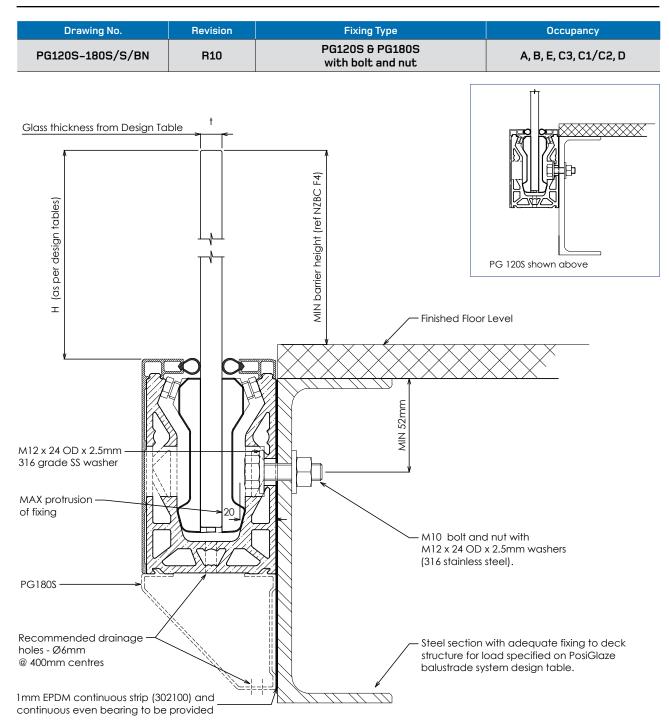
NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M*and T* specified on PosiGlaze balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with PosiGlaze balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) No substitution allowed any variation from the details above and design tables will require specific design.



POSIGLAZE PG120S & PG180S BALUSTRADE SYSTEM

Steel Fixing Detail



Refer to PosiGlaze balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M*and T* specified on PosiGlaze balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with PosiGlaze balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) For fixing to steel substrates, the installer shall ensure the bolts are tightened to a "snug-tight" level as defined in NZS3404.
- 5) No substitution allowed any variation from the details above and design tables will require specific design.



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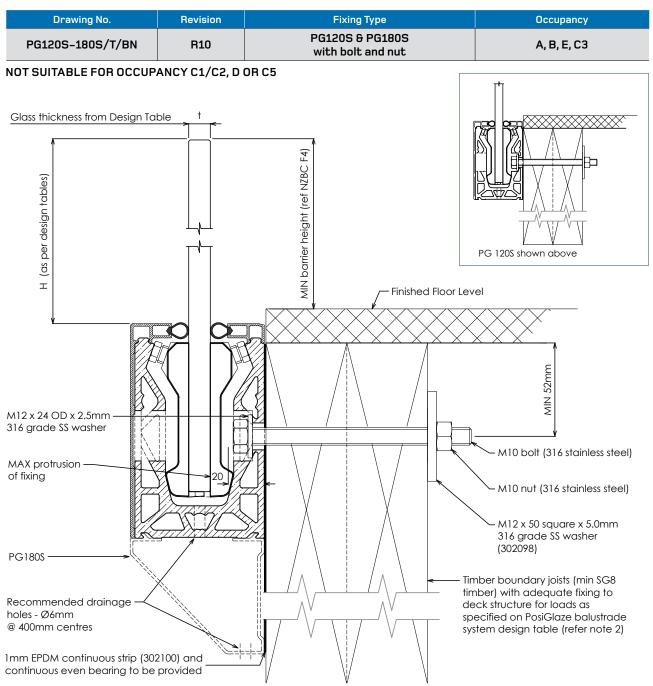
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POSIGLAZE

POSIGLAZE PG120S & PG180S BALUSTRADE SYSTEM

Timber Fixing Detail



Refer to PosiGlaze balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- Capacity of structure is to be of sufficient strength to support loads M*and T* specified on PosiGlaze balustrade system design table. Structure capacity to be verified by building engineer where applicable or checked to NZS3604 requirements prior to fixing balustrade.
- 2) Timber decks designed to NZS 3604:2011 guidelines will meet loading requirement, except for decks including cantilever floor joists where specific design is required.
- 3) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with PosiGlaze balustrade system design table.
- 4) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 5) For fixing to timber substrates, the installer shall ensure that the bolt / coach screw is sufficiently tightened to reduce movement of the bolt head and washer. Care should be taken not to over tighten the fixings that would cause crushing of the timber or compromise the thread leading to anchor pull-out.

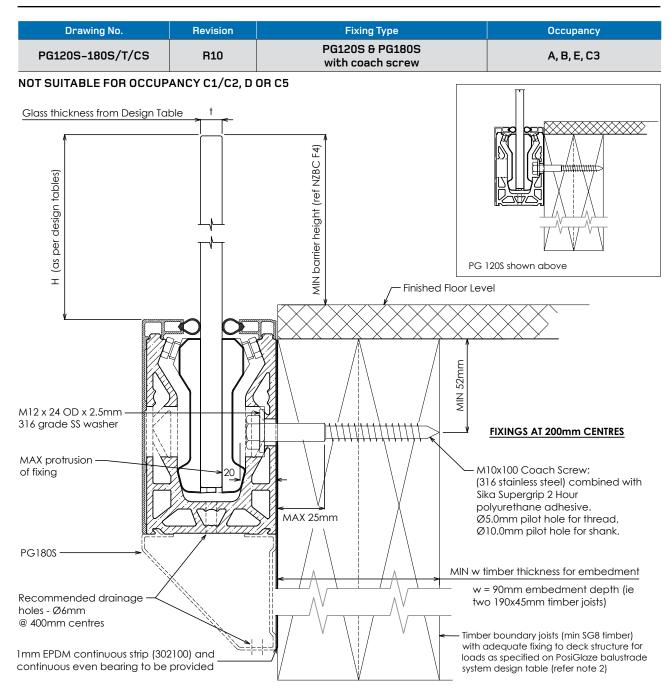
6) No substitution allowed - any variation from the details above and design tables will require specific design.



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POSIGLAZE PG120S & PG180S BALUSTRADE SYSTEM

Timber Fixing Detail



Refer to PosiGlaze balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- Capacity of structure is to be of sufficient strength to support loads M*and T* specified on PosiGlaze balustrade system design table. Structure capacity to be verified by building engineer where applicable or checked to NZS3604 requirements prior to fixing balustrade.
- 2) Timber decks designed to NZS 3604:2011 guidelines will meet loading requirement, except for decks including cantilever floor joists where specific design is required.
- 3) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with PosiGlaze balustrade system design table.
- 4) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 5) For fixing to timber substrates, the installer shall ensure that the bolt / coach screw is sufficiently tightened to reduce movement of the bolt head and washer. Care should be taken not to over tighten the fixings that would cause crushing of the timber or compromise the thread leading to anchor pull-out.
- 6) No substitution allowed any variation from the details above and design tables will require specific design.

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POSIGLAZE ELEVATION

SAFELITE STF Glass

POSIGLAZE SYSTEM

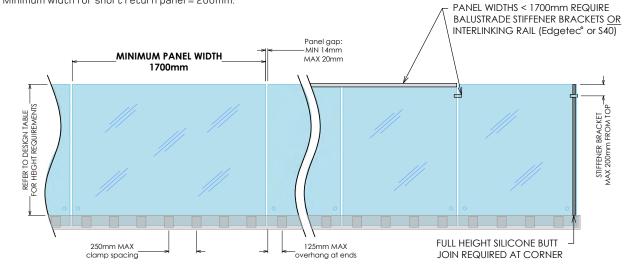
SAFELITE® STF (Sentry®) 13.52mm

PANEL WIDTH NOTES:

Balustrade stiffener brackets or interlinking rail required for panels <1700mm. Minimum panel width where two or more panels are in a straight line = 1000mm. Minimum width for short return panel = 200mm.

Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



POSIGLAZE SYSTEM

SAFELITE® STF (Sentry®) 17.52mm, 21.52mm

PANEL WIDTH NOTES:

Balustrade stiffener brackets or interlinking rail required for panels <1100mm.

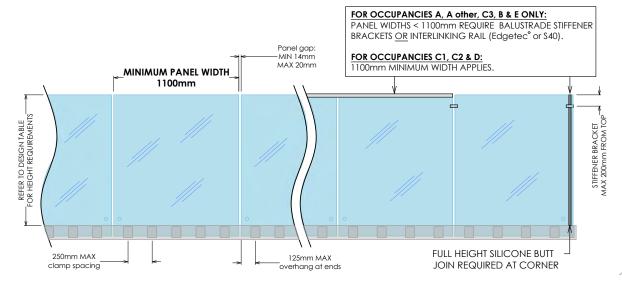
Minimum panel width where two or more panels are in a straight line = 1000mm.

Minimum width for short return panel = 200mm.

17.52mm – Residential & Commercial Occupancy types A, A other, C3, B and E. 21.52mm – Commercial

Occupancy types C1, C2 and D.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



IMPORTANT NOTE: The substructure to which the balustrade is to be attached must be designed by a structural engineer to resist the relevant balustrade actions as per B1/VM1.



POSIGLAZE ELEVATION

SAFELITE EVA Glass

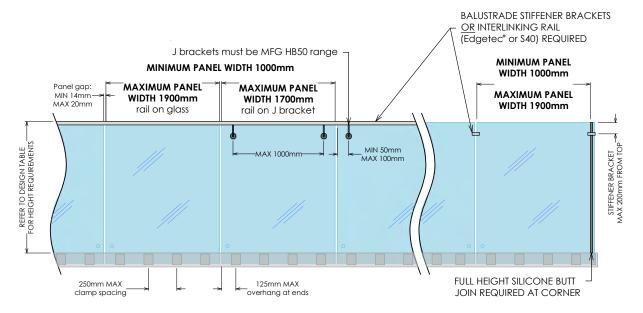
POSIGLAZE SYSTEM

SAFELITE® EVA 15.2mm, 17.2mm

PANEL WIDTH NOTES:

Minimum panel width where two or more panels are in a straight line = 1000mm. Minimum width for short return panel = 200mm. Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



POSIGLAZE SYSTEM

SAFELITE[®] EVA 19.2mm

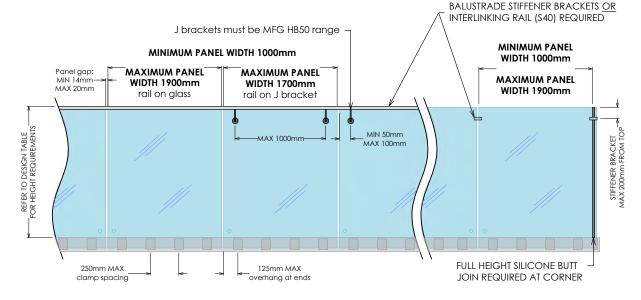
PANEL WIDTH NOTES:

Minimum panel width where two or more panels are in a straight line = 1000mm. Minimum width for short return panel = 200mm.

Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height,

maximum fixing spacing and design loads to structure.



IMPORTANT NOTE: The substructure to which the balustrade is to be attached must be designed by a structural engineer to resist the relevant balustrade actions as per B1/VM1.

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POSIGLAZE ELEVATION

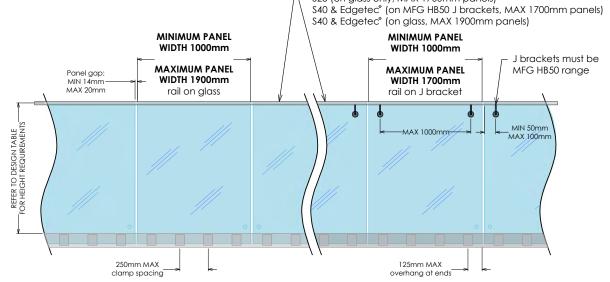
TEMPAFLOAT Glass

POSIGLAZE SYSTEM

TEMPAFLOAT® 12mm

PANEL WIDTH NOTES:

Minimum panel width where two or more panels are in a straight line = 1000mm. Minimum width for short return panel = 200mm. Residential & Commercial Occupancy types A, A other, C3, B and E. GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure. - INTERLINKING RAIL REQUIRED: S25 (on glass only, MAX 1700mm panels)



POSIGLAZE SYSTEM

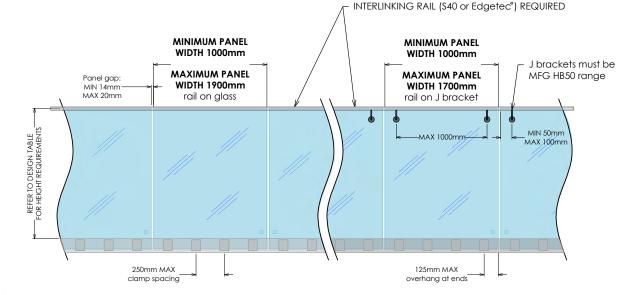
TEMPAFLOAT® 15mm

PANEL WIDTH NOTES:

Minimum panel width where two or more panels are in a straight line = 1000mm. Minimum width for short return panel = 200mm.

Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



IMPORTANT NOTE: The substructure to which the balustrade is to be attached must be designed by a structural engineer to resist the relevant balustrade actions as per B1/VM1.



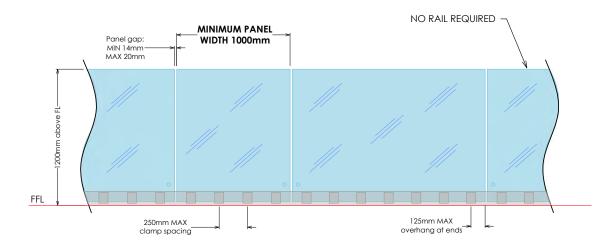
Pool Fence

POSIGLAZE SYSTEM POOL FENCE ONLY (BASE FIX)

GLASS & FIXING SPECIFICATIONS:

Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure. APPLIES TO FREE STANDING POOL FENCES NOT PROTECTING A FALL OF > 1000mm.

As of Jan 2017, complies with Building Code clause F9 ϑ section 162C of the building Act.



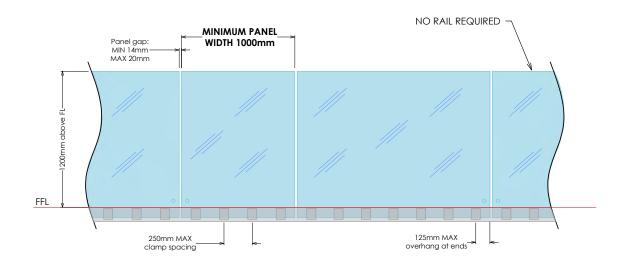
POSIGLAZE SYSTEM POOL FENCE ONLY (SIDE FIX)

GLASS & FIXING SPECIFICATIONS:

Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.

APPLIES TO FREE STANDING POOL FENCES NOT PROTECTING A FALL OF > 1000mm.

As of Jan 2017, complies with Building Code clause F9 & section 162C of the building Act.



 $\label{eq:intermediate} IMPORTANT NOTE: The substructure to which the balastrade is to be attached must be designed by a structural engineer to resist the relevant balastrade actions as per B1/VM1.$

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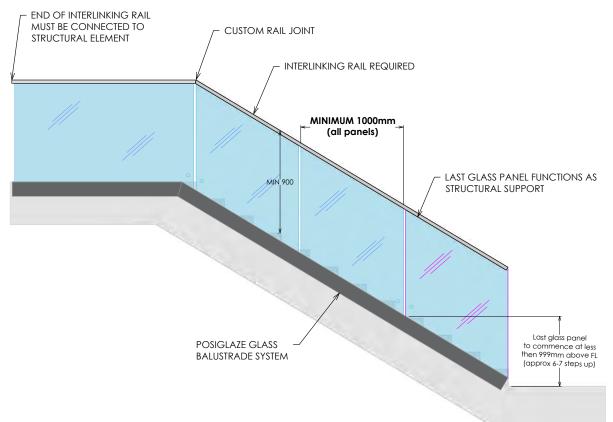
POSIGLAZE ELEVATION

Stair Balustrade

POSIGLAZE SYSTEM STAIR BALUSTRADE

GLASS & FIXING SPECIFICATIONS:

Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



IMPORTANT NOTE: The substructure to which the balustrade is to be attached must be designed by a structural engineer to resist the relevant balustrade actions as per B1/VM1.



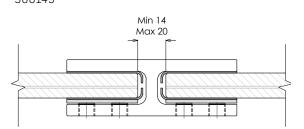




Balustrade Stiffener Brackets

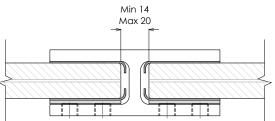
STRAIGHT BRACKET

13.5–15.5mm GLASS 300149



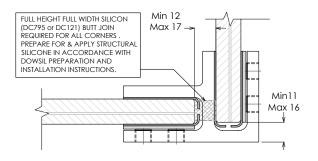
STRAIGHT BRACKET

17.52 – 21.52mm GLASS 300150



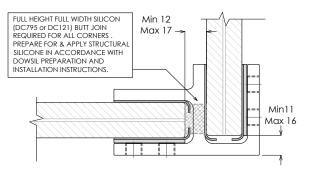
CORNER BRACKET

13.5–15.5mm GLASS 300151



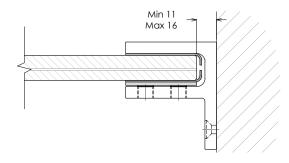
CORNER BRACKET

17.52 – 21.52mm GLASS 300152



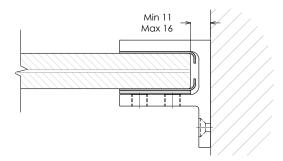
WALL BRACKET

13.5–15.5mm GLASS 300153



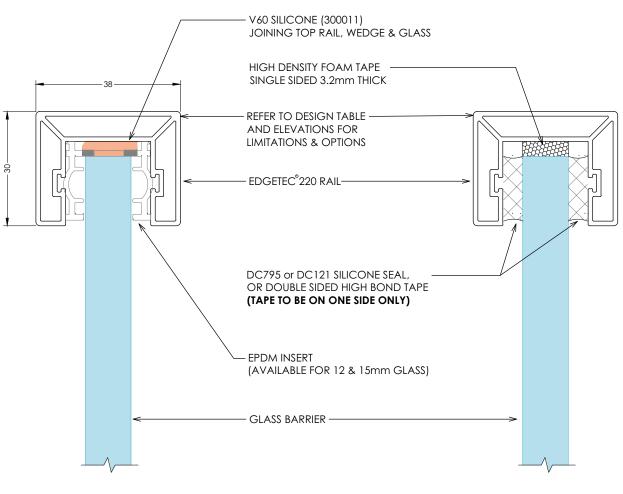
WALL BRACKET

17.52 – 21.52mm GLASS 300154





Edgetec[®]220 Link Rail



EPDM GASKET SYSTEM

TAPE & SILICONE SYSTEM

INSTALLATION NOTES:

- 1. Cut short lengths of gasket (nom 50mm) and place at approximately 700mm centres.
- 2. Cut / adjust interlinking rail to correct dimensions and test in position.
- 3. Remove all parts from glass barrier and install full cut lengths of gasket to top edge of glass barrier.
- 4. Assemble top rail, joiners and suitable end plates.
- 5. Place blobs of v60 silicone in every gasket hole.
- 6. Place top rail extrusion, joiners and end plates in position on glass barrier, clipping firmly to gasket.
- 7. Tape assembled components down to glass barrier and wait 24hrs to fully bond.
- 8. Clean up any excess silicone.

NOTE: rail ends must be attached to structure or structural post. Extrusion joins must have a suitable joiner plate

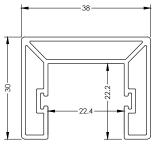
IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



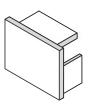
Edgetec[®]220 Link Rail

Edgetec[®] 220 Rail for 12mm 8 15mm Glass

Full Length (5800mm) 300729 Half Length (2900mm) 300726 38x30mm



Edgetec® 220 Rail End Cap (300494) 38x30mm



Edgetec[®] 220 Rail

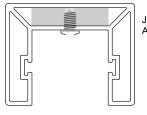
Black EPDM Gasket (2900mm length) for 12mm Glass 300593 for 15mm Glass 300594



Joiners: (After cutting extrusions to length)

- With Joiner in place, spot drill from below for position

- Drill out to joiner to 3mm dia, extrusion to 4mm dia
- Use No 6 x 1/4in SS ST Pan sq drive Screw (301993)



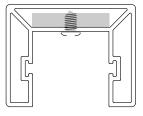
Joiners both 22.5 x 5mm Aluminium

End Plates: (After cutting extrusions to length)

- With End Plate in place, spot drill from below for position

- Drill out to SS tab to 3mm dia, extrusion to 4mm dia
- Use No 6 x 1/4in SS ST Pan sq drive Screw (301993)
- End Plate must be securely attached to Post or structure.

Edgetec® 220 Rail Fixed 90 Degree Joiner (#300848)



50x50x5mm

End Plate Tabs all 22.5 x 4mm SS.

JOINERS NOM. 22.5 X 5MM ALUMINIUM

Edgetec® 220 Rail Inline Joiner (#300847) 80x22.5x5mm



Edgetec® 220 Rail Vertical Adjustable Joiner (#301990)



Edgetec® 220 Rail Wall Bracket Post End* (#301992) 60x46mm



* Suits AP65 Aluminium Post

Edgetec[®] 220 Rail Horizontal Fixed Joiner (#301985)



Edgetec® 220 Rail Wall Bracket Left Hand (#301004)



Edgetec[®] 220 Rail Wall Bracket Right Hand (#301006) 120x45mm



Edgetec[®] 220 Rail Horizontal

Adjustable Joiner (#301988)

Edgetec® 220 Rail Wall Bracket Post End (#301149) 100x45mm

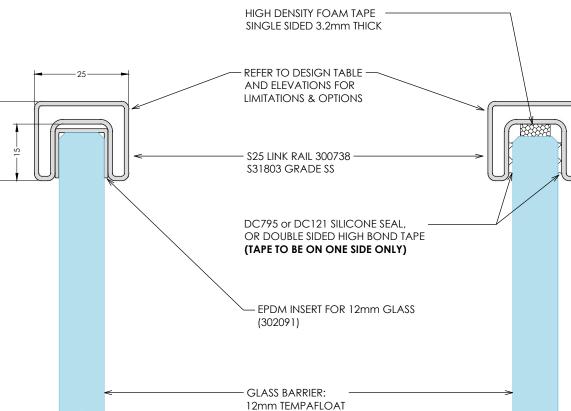


TABS ALL 22.5 X 4MM. FRONT FACES ALL 3MM.

IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

S25 Link Rail

1



EPDM GASKET SYSTEM

TAPE & SILICONE SYSTEM

NOTES:

- 1. Interlinking rail details are only to be used on metro performance glass. Cantilevered glass balustrades.
- 2. Prepare for and apply DC795 & DC121 structural silicone in accordance with dow. Corning preparation and installation instructions.
- 3. Interlinking rail splice & corner connections are shown on drawings S25-02 & S25-03
- 4. Interlinking rail end connection brackets 8 attachment details are shown on drawings S25-04 to S25-08.
- 5. All screws to be stainless steel with a minimum ultimate shear strength of 3.5kN (per Screw).
- 6. Link rail section and connection pieces to be S31803 grade stainless steel, In accordance with NZS 4673:2001.
- 7. Refer to warranty & maintenance pages for periodic inspection, cleaning & maintenance requirements.

IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



S25 Link Rail

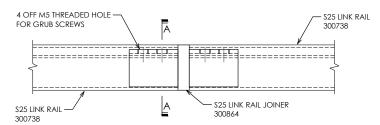
S25-02 S25 RAIL - SPLICE CONNECTION DETAIL

All fixings to be stainless steel

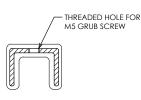
S25 LINK RAIL SECTION 300738

Ø5mm HOLE FOR M5 GRUB SCREW

S25 LINK RAIL - SPLICE CONNECTION ELEVATION



S25 LINK RAIL INLINE JOINER 300864

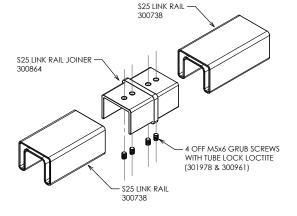




300738

M5x6mm GRUB SCREWS WITH TUBE LOCK LOCITIE (301978 & 300961)

S25 LINK RAIL JOINER



S25-03 S25 RAIL - 90° CORNER CONNECTION DETAIL

All fixings to be stainless steel

S25 LINK RAIL SECTION S25 LINK RAIL - 90° CORNER CONNECTION ELEVATION 300738 Ø5mm HOLE FOR S25 LINK RAIL 90° CORNER DRILL & TAP 4 OFF M5 THREADED M5 GRUB SCREW 300861 В HOLES FOR GRUB SCREWS TΠ =========== S25 LINK RAIL 300738 В S25 LINK RAIL 90° CORNER **SECTION B-B** 300861 S25 LINK RAII S25 LINK RAIL 90° CORNER 300738 300861 _____ M5x6mm GRUB SCREWS S25 LINK RAIL FIXED 90° CORNER WITH TUBE LOCK LOCTITE 300861

IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

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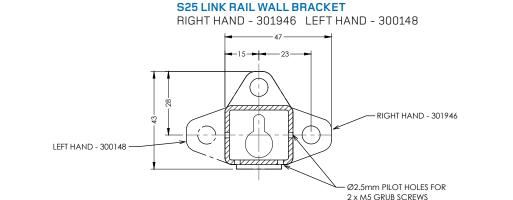


S25 Link Rail

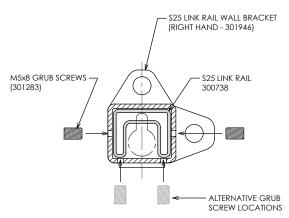
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S25-04 S25 RAIL WALL BRACKET All fixings to be stainless steel

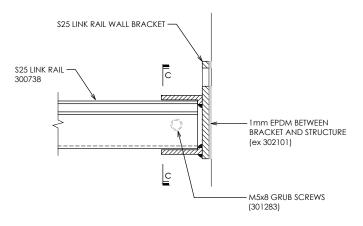




SECTION C-C



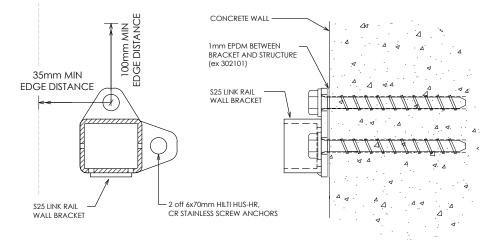
S25 LINK RAIL - END BRACKET SECTION



S25-05 S25 RAIL - END BRACKET CONCRETE WALL ATTACHMENT All fixings to be stainless steel

NOTES:

- Concrete wall is to be designed by project structural engineer for loads Imposed by balustrade. ULS Point load, n* = 0.9kN -
 - Inwards, outwards or down.
- 2. Concrete wall to be minimum 140mm thick.
- Concrete wall must be reinforced 8 is to be designed 8 detailed in accordance with NZS3101.
- Minimum concrete strength = 20MPa.



IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

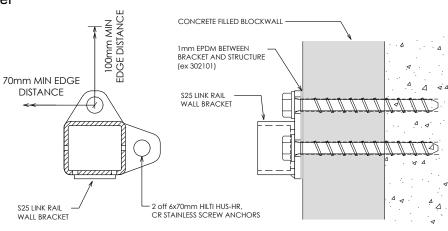


S25 Link Rail

S25-06 S25 RAIL - END BRACKET BLOCKWALL ATTACHMENT All fixings to be stainless steel

NOTES:

- Blockwall is to be designed by Project structural engineer for loads imposed by Balustrade. ULS point load, n* = 0.9kN- inwards, outwards or Down.
- 2. Minimum blockwall thickness = 140mm.
- Blockwall must be corefilled / Reinforced θ is to be designed θ detailed in Accordance with NZS4230 or NZS4229.
- 4. Minimum corefill concrete Strength = 17.5MPa.



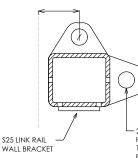
S25-07 S25 RAIL - END BRACKET WEATHERBOARD ATTACHMENT

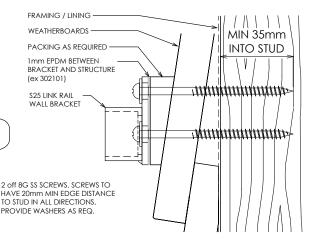
All fixings to be stainless steel

NOTES:

- Timber stud wall is to be designed by project Structural engineer for loads imposed by balustrade. ULS Point load, n* = 0.9kN - Inwards, outwards or down.
- 2. Minimum stud size = 90x45.
- 3. Minimum timber grade = SG8.
- Timber stud wall to be Designed θ detailed in accordance with NZS3603 or NZS3604.

20mm MIN EDGE DISTANCE TO STUD



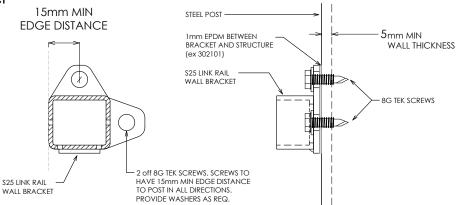


S25-08 S25 RAIL - END BRACKET STEEL POST ATTACHMENT

All fixings to be stainless steel

NOTES:

- Steel post is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9Kn - inwards, outwards or down.
- 2. Building designer to ensure durability requirements of connection are met.
- 3. Minimum steel post wall thickness = 5mm.
- 4. Minimum steel grade = 300MPa.



IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

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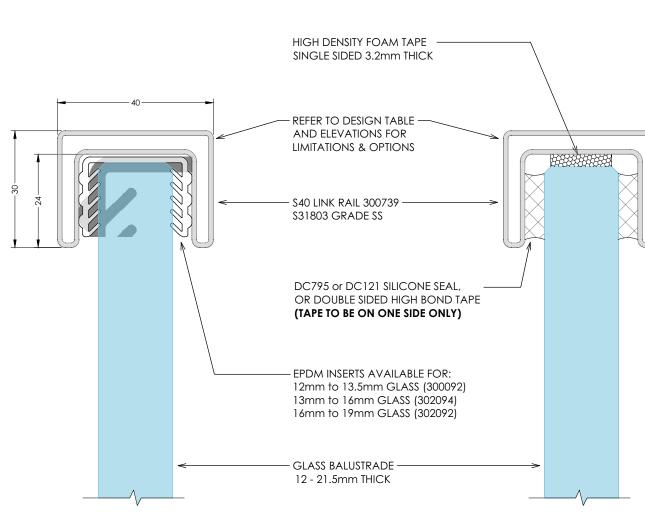
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S40 RAIL - TYPICAL INSTALLATIONS

S40 Link Rail

S40-01



EPDM GASKET SYSTEM

TAPE & SILICONE SYSTEM

NOTES:

- 1. Interlinking rail details are only to be used on metro performance glass cantilevered glass balustrades.
- 2. Prepare for and apply DC795 & DC121 structural silicone in accordance with dow corning preparation and installation instructions.
- 3. Interlinking rail splice & corner connections are shown on drawings S40-02 & S40-03
- 4. Interlinking rail end connection brackets & attachment details are shown on drawings S40-04 to S40-08.
- 5. All screws to be stainless steel with a minimum ultimate shear strength of 3.5Kn (per screw).
- 6. Link rail section and connection pieces to be S31803 grade stainless steel, in accordance with NZS 4673:2001.
- 7. Refer to warranty & maintenance pages for periodic inspection, cleaning & maintenance requirements.

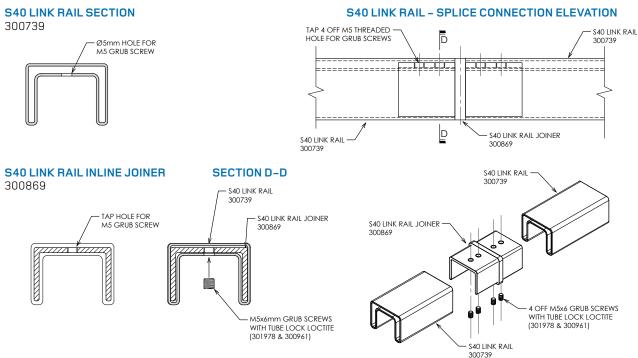
IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



S40 Link Rail

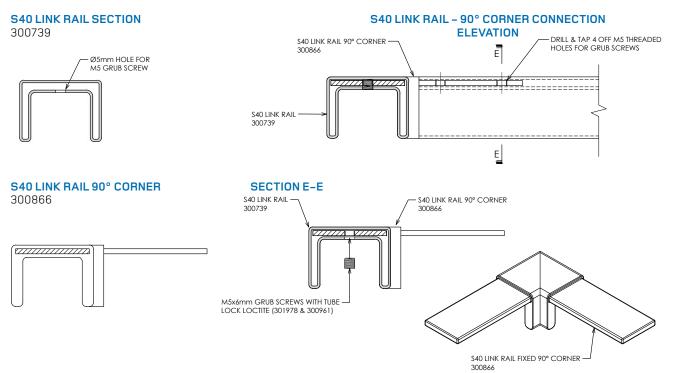
S40-02 S40 RAIL - SPLICE CONNECTION DETAIL

All fixings to be stainless steel



S40-03 S40 RAIL - 90° CORNER CONNECTION DETAIL

All fixings to be stainless steel



IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

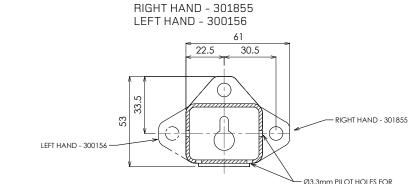
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S40 Link Rail

S40-04 S40 RAIL WALL BRACKET



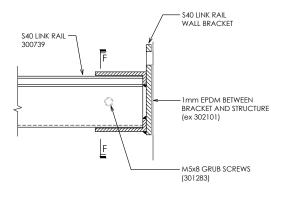


S40 LINK RAIL WALL BRACKET

SECTION F-F

S40 LINK RAIL - END BRACKET SECTION

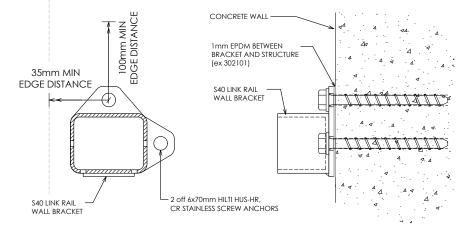
2 x M5 GRUB SCREWS



S40-05 S40 RAIL - END BRACKET CONCRETE WALL ATTACHMENT All fixings to be stainless steel

NOTES:

- Concrete wall is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Concrete wall to be minimum 140mm thick.
- Concrete wall must be reinforced θ is to be designed θ detailed in accordance with NZS3101.
- 4. Minimum concrete strength = 20MPa.



IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

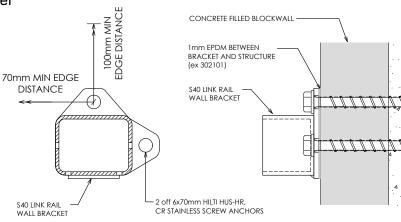


S40 Link Rail

S40 - 06S40 RAIL - END BRACKET BLOCKWALL ATTACHMENT All fixings to be stainless steel

NOTES:

- 1. Blockwall is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9Kn - inwards, outwards or down.
- 2. Minimum blockwall thickness = 140mm.
- 3. Blockwall must be corefilled / reinforced & is to be designed & detailed in accordance with NZS4230 or NZS4229.
- 4. Minimum corefill concrete strength = 17.5Mpa.



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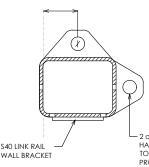
S40-07 S40 RAIL - END BRACKET WEATHERBOARD ATTACHMENT

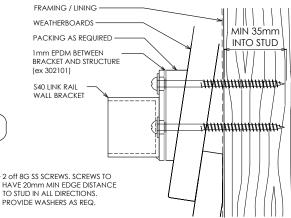
All fixings to be stainless steel

NOTES:

- 1. Timber stud wall is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9Kn - inwards, outwards or down.
- 2. Minimum stud size = 90x45.
- 3. Minimum timber grade = sg8.
- 4. Timber stud wall to be designed & detailed in accordance with nzs3603 or nzs3604.

20mm MIN EDGE DISTANCE



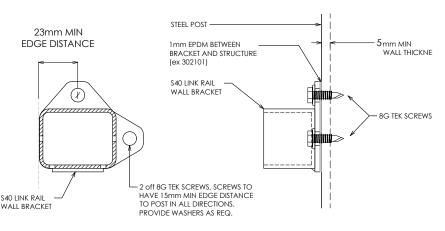


S40-08 S40 BAIL - END BRACKET STEEL POST ATTACHMENT

All fixings to be stainless steel

NOTES:

- 1. Steel post is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Building designer to ensure durability requirements of connection are met.
- 3. Minimum steel post wall thickness = 5mm.
- 4. Minimum steel grade = 300MPa.



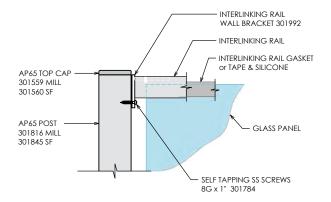
IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



For attaching EDGETEC[®] 220 (on glass) to a Semi Frameless

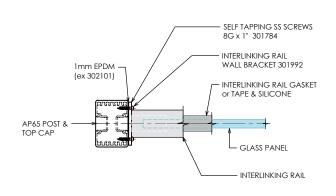
AP65 Post Interlinking Top Rail (where wall fixing not suitable)

AP65 Structural Post & Edgetec® 220 **Rail Side Elevation**

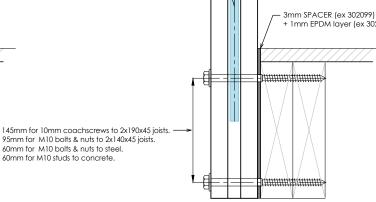


1mm EPDM (302100)

AP65 Structural Post & Edgetec® 220 Rail Plan



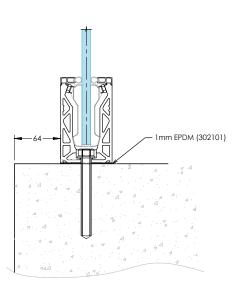
Edgetec® 220 Rail & AP65 Semi Frameless Post Extrusion Side Fix Post as an end Post



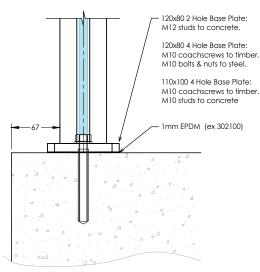
+ 1mm EPDM layer (ex 302101)

PosiGlaze Base Fix

PosiGlaze Side Fix



AP65 Semi Frameless Post Extrusion Base Fix Post as an end Post



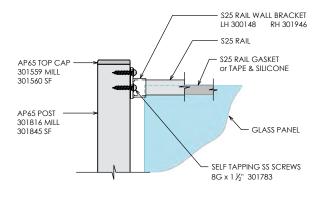
IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



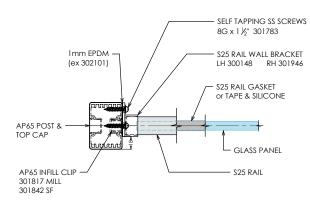
For attaching S25 Link Rail (on glass) to a Semi Frameless

AP65 Post Interlinking Top Rail (where wall fixing not suitable)

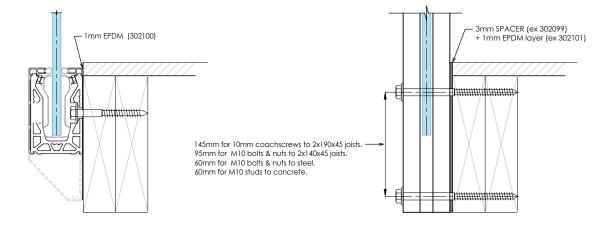
AP65 Structural Post & S25 Rail Side Elevation



AP65 Structural Post & S25 Rail Plan

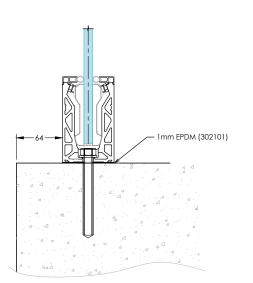


S25 Rail & AP65 Semi Frameless Post Extrusion Side Fix Post as an end Post

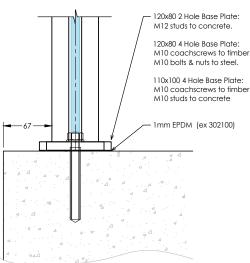


PosiGlaze Base Fix

PosiGlaze Side Fix



AP65 Semi Frameless Post Extrusion PosiGlaze Base Fix Base Fix Post as an end Post



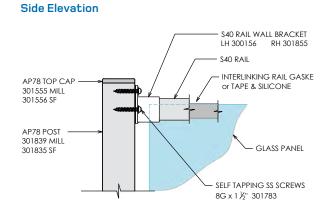
IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

POSIGLAZE SYSTE

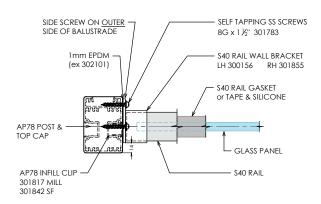
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For attaching S40 Link Rail (on glass) to a Semi Frameless AP78 Post Interlinking Top Rail (where wall fixing not suitable)



AP78 Structural Post & S40 Rail Plan



S40 Rail & AP78 Semi Frameless Post Extrusion

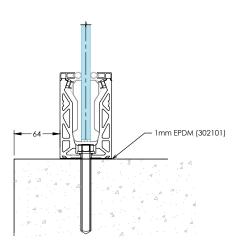
Side Fix Post as an end Post

PosiGlaze Side Fix

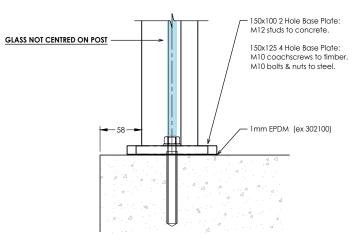
AP78 Structural Post & S40 Rail

GLASS NOT CENTRED ON POST -1mm EPDM layer (ex 302101) 1mm EPDM (302100) munnithunnut Minhiijiiniit 145mm for 10mm coachscrews to 2x190x45 joists. 95mm for M10 bolts & nuts to 2x140x45 joists. 60mm for M10 bolts & nuts to steel. 60mm for M10 studs to concrete. ŧ





AP78 Semi Frameless Post Extrusion Base Fix Post as an end Post



Important note: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1





POSIGLAZE SYSTEM

BASE FIX (PG120B)

Installation / Fitting Instructions

1

Product	Installation/Fitting Instructions
Base Rail	The PosiGlaze base channel should be placed onto its designated position and the holes marked onto the substrate for drilling. Once the shoe is lined up with the holes and is level, the fixings should be tightened up to make the channel rigid. The fixings must be tightened in accordance with the manufacturer's instructions. M10 or M12 bolts can be used.
Glass Slip Clamp Fitting	The glass slip clamps need to be placed onto the bottom of the glass. This requires lifting the glass off the floor sufficiently and pushing into place or applying the clamps to the bottom of the glass. The slip clamps require even spacing. When 4 clamps are used on a metre wide panel the clamps need to be positioned 125mm in from the edge of the glass and then at 250mm centres. The glass can now be lowered into the channel. Refer to Metro PS1 for details.
Glass Clamp Bar Fitting	Once the glass is in the channel the clamp bars must be positioned into the top of each glass slip clamp. Firstly, screw the bolt into the clamp bar until the head of the bolt just reaches the bar. Screw the bolt into the flat side as the shaped side of the bar will sit nearest to the glass. Each clamp bar can now be inserted into the glass slip clamps. As shown in the image to the left.
Getting Glass Level and Tightening Bolts	Place a spirit level on the glass to get the glass in the correct position. The bolts now need tightening equally to keep the same pressures on the glass. To adjust the glass into position the bolts can be unscrewed back towards the wall of the channel. To achieve the correct positioning firstly square up and level each end of the glass and tighten the bolts. Then tighten the bolts on the intermediate clamp bars. Give the bolts an additional half turn to ensure that the glass is securely held in place. You must use an adhesive, such as Loctite, on the threads.
Top Seal Strip	The gasket requires feeding into rebates on the smaller profiles, do not stretch the gasket. Once the gasket is flush with each end of the strip it can now be cut and clipped onto the top of the channel. This can be done by pressing firmly down on the profile working from one end to the other. A soft mallet may be required, knocking the right angled corner.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel need to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the PosiGlaze channel. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.

A fitting video is also available on our website www.metroglass.co.nz



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POSIGLAZE SYSTEM

Installation / Fitting Instructions

SIDE FIX (PG120S) (PG180S)





Product	Installation/Fitting Instructions
Fixing the Channel	The side drilled channel should be placed onto its designated position and the holes marked onto the substrate for drilling. Once the shoe is lined up with the holes and level the fixings should be tightened up to make the channel rigid. The fixings must be tightened in accordance with the manufacturer's instructions. M10 or M12 bolts in concrete can be used. M10 bolt / nut or coachscrews can be used for steel and timber substrates.
Glass Slip Clamp Fitting	The glass slip clamps need to be placed onto the bottom of the glass. This requires lifting the glass off the floor sufficiently and pushing into place or applying the clamps to the bottom of the glass. The slip clamps require even spacing. When 4 clamps are used on a metre wide panel the clamps need to be positioned 125mm in from the edge of the glass and then at 250mm centres. The glass can now be lowered into the channel. Refer to Metro PS1 for details.
Glass Clamp Bar Fitting	Once the glass is in the channel the clamp bars must be positioned into the top of each glass slip clamp. Firstly, screw the bolt into the clamp bar until the head of the bolt just reaches the bar. Screw the bolt into the flat side as the shaped side of the bar will sit nearest to the glass. Each clamp bar can now be inserted into the glass slip clamps. As shown in the image to the left.
Getting Glass Level and Tightening Bolts	Place a spirit level on the glass to get the glass in the correct position. The bolts now need tightening equally to keep the same pressures on the glass. To adjust the glass into position the bolts can be unscrewed back towards the wall of the channel. To achieve the correct positioning firstly square up and level each end of the glass and tighten the bolts. Then tighten the bolts on the intermediate clamp bars. Give the bolts an additional half turn to ensure that the glass is securely held in place. You must use an adhesive, such as Loctite, on the threads.
Top Seal Strip & Side Cladding	The gasket requires feeding into rebates on the smaller profiles, do not stretch the gasket. Once the gasket is flush with each end of the strip it can now be cut. The top seal strip needs to be loosely sat on the ridge of the channel and can be fixed by pressing firmly down on the profile working from one end to the other. A soft mallet may be required, knocking the right angled corner. The side cladding will need a double sided tape or adhesive on the channel, it then simply hooks over the ridge.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel need to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the PosiGlaze channel. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.

A fitting video is also available on our website www.metroglass.co.nz

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1



50mm DoubleDisc MB50 System (Side Fix)

The DoubleDisc MB50 series is a range of disc fittings for point fixing cantilevered glass balustrades. Round and square cover plate options are available.

FULLY ADJUSTABLE DURING INSTALLATION A multi-directional wall aligning adjustment option is available for easier glass alignment and faster installations.

-

ENGINEERED solid 316 Marine Grade stainless steel anchor fixing.



Key Features

- The DoubleDisc MB50 Balustrade System is side fixed for (face) mounted applications.
- Range of options from a contemporary squared edge look through to the latest adjustable spacer option.

Material Finish

- Made from 316 grade stainless steel.
- Available in machined, satin or polished finish.
- Powdercoated upon request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.
- All fixings must be Stainless Steel.

Occupancy Type

- Suitable for occupancy types A, A Other B, E, and C3.
- Occupancy Types as per AS/NZ 1170.1.2002.

Windzone

- Exceeds the wind loading for all Wind Zones up to and Including Extra High Wind Zone as set out in NZS 3604:2011.
- Max design Wind pressure subject to glass type and fixing method.

The system is glazed with Metro Performance Glass, as follows:

- TEMPAFLOAT® 12mm & 15mm nominal thickness, monolithic toughened safety glass, with an interlinking rail.
- SAFELITE® EVA 15.2mm & 17.2mm nominal thickness, toughened laminated safety glass, with either an interlinking rail or stiffener brackets.

SAFELITE® EVA Toughened Laminated Safety Glass

SAFELITE® STF (Sentry®) 13.52mm & 17.52mm nominal thickness, toughened laminated safety glass with sentry interlayer. No rail or bracket required subject to minimum width met.

Interlinking Hand Rail

All monolithic toughened frameless glass balustrades must have an Interlinking Rail to conform to NZS 4223.3.2016, including the latest amendment of NZBC B1.

Compliance

Complies with AS/NZS 1170:2002, NZS 4223.3.2016, NZ Building Code B1, F2, F4 and F9.

Scope of Use

- The DoubleDisc Anchor is a 50mm diameter traditional stainless steel anchor fixing offering, ideal for those seeking a more industrial looking Frameless Glass Balustrade aesthetic.
- The 30mm long body sets the 12mm/17.52mm toughened glass panels out from the deck to assist with water draining and cleaning.
- The DoubleDisc Anchor system is ideal for external balconies and stairs - as well as for internal stairs and landings. It can be fixed directly to either timber, steel or concrete surfaces.
- An interlinking top rail finishes off the system, producing a low profile modern look.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Outer Layer glass Thickness (Nominal mm)	
15.2	8	1.2 EVA	6	
17.2	8	1.2 EVA	8	

> Brackets are required when specifying Laminated Structural Glass with a EVA Interlayer (minimum panel widths apply)

SAFELITE® STF (Sentry®) Toughened Laminated Safety Glass with rigid interlayer

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Outer Layer glass Thickness (Nominal mm)
13.52	6	1.52 Sentry®	6
17.52	8	1.52 Sentry®	8

An interlinking rail is not required when specifying SAFELITE® STF (Sentry®) interlayer. (minimum panel widths apply).

Note: Inner layer refers to the balcony side



BALUSTRADE SYSTEM COMPONENTS

Individual Parts – 50mm DoubleDisc MB50

(Domestic and Commercial Applications)



MB50 ADJUSTABLE HEAVYWEIGHT ANCHOR30001950mm dia. 40-50mm standoffSS316 STAINLESS STEELANCHOR DISCBALUSTRADE SYSTEM (FACE FIX GLASS TO WALL)MB50 HEAVYWEIGHT ANCHOR30002512mmSS POWDERCOAT316 STAINLESS STEELANCHOR DISCBALUSTRADE SYSTEM (FACE FIX GLASS TO WALL)MB50 HEAVYWEIGHT ANCHOR30002512mmSS 300023316 STAINLESS STEELANCHOR DISCBALUSTRADE SYSTEM (FACE FIX GLASS TO WALL)MB50 HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoff GLASS THICKNESS: 12-15mmON REQUEST: POWDERCOAT316 STAINLESS STEELANCHOR DISC STEELBALUSTRADE SYSTEM (FACE FIX GLASS TO WALL)MB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoffSS PS316 STAINLESS STEELANCHOR DISC STEELBALUSTRADE SYSTEM (FACE FIX GLASS TO WALL)MB50 SQUARE COVER KIT 30096630028 50 x50 x30mmSS Steel316 STAINLESS STEELANCHOR DISC STEELBALUSTRADE SYSTEM (FACE FIX GLASS TO WALL)	A	A 11 1 1		KALL THE	F 1 - 1 - 1	0.	NA . J.I.	Desident
ADJUSTABLE HEAVYWEIGHT ANCHOR30001940-50mm standoffPSStandoffPS300019GLASS THICKNESS: 12-15mmON REQUEST: POWDERCOATSTEELSTEELSTEELSTEELMB50 HEAVYWEIGHT ANCHOR30002512mmSS 900023316 STAINLESS POWDERCOATANCHOR DISCBALUSTRADE SYSTEMMB50 HEAVYWEIGHT ANCHOR30002512mmPS 301628316 STAINLESS STEELANCHOR DISC STEELBALUSTRADE SYSTEMMB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoffON REQUEST: POWDERCOAT316 STAINLESS STEELANCHOR DISC STEELBALUSTRADE SYSTEMMB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoffSS PS316 STAINLESS STEELANCHOR DISC STEELBALUSTRADE SYSTEMMB50 SQUARE COVER KIT 30096650x50 x10mm 50x50 x30mmSS PS316 STAINLESS STEELCOVERTS ROUND FIXING TO SQUARE SUITSBALUSTRADE STEELSUSS STEELMB50 SQUARE COVER KIT300966Front Cover 50x50 x30mmSS PS316 STAINLESS STEELCOVERTS ROUND FIXING TO SQUARE SUITS	Area	Application	Туре	Material	Finish	Sizes mm	Model	Product
ANCHOHGLASS THICKNESS: 12-15mmON REQUEST: POWDERCOATON REQUEST: POWDERCOATMB50 HEAVYWEIGHT ANCHOR30002512mmSS 300023316 STAINLESS STEELANCHOR DISC STEELBALUSTRADE SYSTEMMB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoff GLASS THICKNESS: 12-15mmON REQUEST: POWDERCOATANCHOR DISC STEELBALUSTRADE SYSTEMMB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoff GLASS THICKNESS: 12-15mmON REQUEST: POWDERCOAT316 STAINLESS STEELANCHOR DISC STEELBALUSTRADE SYSTEM (FACE FIX GLASS TO WALL)MB50 BUTTON HEAD FOR SUCHT ANCHOR50043250mm dia. STEELSS 316 STAINLESS STEELANCHOR DISC STEELBALUSTRADE SYSTEM (FACE FIX GLASS TO WALL)MB50 SQUARE COVER KIT 300966300028 SOX 50 X 30mmSS SS SS 316 STAINLESS STEELCOVERTS STEELBALUSTRADE SUITS STEELMB50 SQUARE COVER KIT 30096650 400 S0 X 50 X 30mmPS316 STAINLESS STEELCOVERTS STEELBALUSTRADE SUITS SUITS SUITS SUITS SUITS	Internal & External		ANCHOR DISC			40-50mm		ADJUSTABLE
HEAVYWEIGHT ANCHOR30002312mmPSSTEELINTOINT DISCSYSTEM30162815mmSS30162815mmSS30mm standoff50mm dia. GLASS 	 ∰ L	GLASS TO				GLASS THICKNESS:		ANCHOR
ANCHOR30002312mmPS30162815mmSS30162815mmSS30162815mmSS30mm standoff0N REQUEST: POWDERCOATNACHOR DISCMB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. StandoffSS30mm standoffSS316 STAINLESS STEELANCHOR DISCBUTTON HEAD HEAVYWEIGHT 	Internal &	BALUSTRADE	ANCHOR DISC	316 STAINLESS	SS	12mm	300025	MB50
30162815mmSS30162815mm dia. 30mm standoff GLASS THICKNESS: 12-15mmON REQUEST: POWDERCOATON REQUEST: POWDERCOATMB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoffSS3016 STAINLESS THICKNESS: 12-15mm316 STAINLESS STEELANCHOR DISCBALUSTRADE SYSTEM (FACE FIX GLASS STEELMB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoffSS316 STAINLESS STEELANCHOR DISCBALUSTRADE SYSTEM (FACE FIX GLASS STEW)MB50 SQUARE COVER KIT 300966300028Front Cover 50 x 50 x 10mmSS316 STAINLESS STEELCOVERTS ROUND FIXING TO SQUARE SUITS SUITSBALUSTRADE COVERNT	External	SYSTEM		STEEL	PS	12mm	300023	
SolutionSolutionSolutionON REQUEST: POWDERCOATWALL)30mm standoff Standoff THICKNESS: 12-15mmSolutionSSS16 STAINLESS STEELANCHOR DISCBALUSTRADE SYSTEMMB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoffSS316 STAINLESS STEELANCHOR DISCBALUSTRADE SYSTEMMB50 BUTTON HEAD HEAVYWEIGHT ANCHOR50043250mm dia. 30mm standoffSS316 STAINLESS STEELANCHOR DISCBALUSTRADE SYSTEMMB50 SQUARE COVER KITGLASS THICKNESS: 12-15mmGLASS SSSS316 STAINLESS STEELCOVERTS ROUND FIXING TO SQUARE SUITSBALUSTRADE SUITSMB50 SQUARE S00966Body 50 x 50 x 30mmSS316 STAINLESS STEELCOVERTS ROUND FIXING TO SQUARE SUITSBALUSTRADE COVERTS ROUND FIXING TO SQUARE SUITS		(FACE FIX			SS	15mm	301628	Anonon
BUTTON HEAD HEAVYWEIGHT ANCHOR Stod432 30mm standoff SS STEEL ANCHOR DISC BALUSTRADE SYSTEM 500433 500433 30mm standoff PS STEEL STEEL SYSTEM 6LASS THICKNESS: 12-15mm GLASS THICKNESS: 12-15mm SS STEEL STEEL SYSTEM MB50 SQUARE COVER KIT 300028 Front Cover 50 x 50 x 10mm SS 316 STAINLESS STEEL COVERTS ROUND FIXING TO SQUARE SUITS BALUSTRADE COMPONENT]။ မြူး					30mm standoff GLASS THICKNESS:		6
HEAVYWEIGHT ANCHOR 500433 Standoff PS Image: Standoff PS Standoff PS Image: Standoff PS Image: Standoff Image: Standoff Image: Standoff PS Image: Standoff Image: Standoff Image: Standoff PS Image: Standoff Image: Standoff Image: Standoff Image: Standoff PS Image: Standoff Image: Standoff Image: Standoff Image: Standoff Image: Standoff Image: Standoff Image: Standoff PS Image: Standoff Image: Standoff Image: Standof	Internal &		ANCHOR DISC		SS	50mm dia.	500432	
ANCHOR GLASS GLASS THICKNESS: 12-15mm GLASS MB50 SQUARE 300028 Front Cover SS 300966 Body 50 x 50 x 30mm PS 300966 Body 50 x 50 x 30mm PS	External			STEEL	PS		500433	HEAVYWEIGHT
COVER KIT 300028 50×50×10mm SS STO STAILLESS COVENTS 300966 Body PS STEEL ROUND FIXING COMPONENT 300966 S0×50×30mm PS SUITS SUITS	J\$∰ []	GLASS TO				GLASS THICKNESS:		ANCHOR
300966 50 x 50 x 30mm PS SUITS	Internal & External				SS		300028	
			SUITS		PS		300966	0
ON REQUEST: COM ONERT POWDERCOAT 300025 500432 500433	႕ သြန္သြား		300025 300023 500432		ON REQUEST: POWDERCOAT			
	Internal &		ANCHOR DISC		SS	50mm dia.	300024	
CLEAT HEAVYWEIGHT ANCHOR 6mm standoff GLASS THICKNESS: 10, 12, 15mm ON REQUEST: POWDERCOAT STEEL (GLASS TO CLEAT FIXING) (FACE FIX GLASS TO WALL) *Need to specify Glass & Cleat thickness for correct screw length *Need to specify Blass & Cleat thickness for correct screw ON REQUEST: POWDERCOAT STEEL (GLASS TO CLEAT FIXING) (FACE FIX BLASS TO WALL)	External	(FACE FIX GLASS TO		STEEL		GLASS THICKNESS: 10, 12, 15mm *Need to specify Glass & Cleat thickness for correct screw		HEAVYWEIGHT ANCHOR



100 METRO

BALUSTRADE SYSTEM COMPONENTS

Individual Parts – 50mm DoubleDisc MB50

Finish

SS

Material

316 STAINLESS

STEEL

Туре

CSK DISC

Application

BALUSTRADE

COMPONENT

Sizes mm

6mm

(Domestic and Commercial Applications)

Model

300440

Product

MB50 CSK DISC



Area

Internal &

External

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MB50 SYSTE

0		M10 50mm dia.	ON REQUEST: POWDERCOAT	STEEL	SUITS COMPONENT 300025 300023	COMPONENT	External မြန်မာ ကို
MB50 STEPPED	300442	10mm	SS	316 STAINLESS	STEPPED	BALUSTRADE	Internal &
DISC		50mm dia.	ON REQUEST: POWDERCOAT	STEEL	DISC SUITS COMPONENT 500432 500433	COMPONENT	External
MB50 THREADED	300441	6mm	SS	316 STAINLESS	THREADED	BALUSTRADE	Internal &
DISC		M10 50mm dia.	ON REQUEST: POWDERCOAT	STEEL	DISC SUITS COMPONENT 300025 300023 500432 500433	COMPONENT	External
MB50 SPACER	301420	6mm	SS	316 STAINLESS	SPACER	BALUSTRADE	Internal &
		50mm dia. *Hole for M10 Rod	ON REQUEST: POWDERCOAT	STEEL	SUITS COMPONENT 300025 300023 500432 500433	COMPONENT	External မြန်မာ ဆို
MB50 50 X 30MM	300094	30mm standoff	SS	316 STAINLESS	BODY	BALUSTRADE	Internal &
BODY		M10 50mm dia.	ON REQUEST: POWDERCOAT	STEEL		COMPONENT	External မြန်မာ ဆို
MB50 CUSTOM LENGTH BODY	SPECIAL CODE	Custom	SS	316 STAINLESS STEEL	CUSTOM LENGTH BODY	BALUSTRADE COMPONENT	Internal & External
		50mm dia.	ON REQUEST: POWDERCOAT				
MB50 NYLON BUSH	300179	Suits 12mm Glass 19.5x 10.5x 11.5mm	BLACK	NYLON	BUSH	BALUSTRADE COMPONENT	Internal & External
	300189	Suits 15mm Glass 19.5x 10.5x1 4.5mm	BLACK				



BALUSTRADE SYSTEM COMPONENTS



Balustrade Stiffener Brackets (For Aligning and Stiffening Panels)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
90 DEGREE STIFFENER BRACKET (GLASS TO WALL)	300153	65x55x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
1	300154	65x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				ال ال
90 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300151	75x50x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal 8 External
S	300152	88x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				ي ال
180 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300149	70x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
26	300150	103x25mm GLASS THICKNESS: 17.5-21.5mm	SS				ا ا ا ا

NOTE: All brackets are supplied with a selection of gaskets to suit glass thickness.



BALUSTRADE FIXING INDIVIDUAL COMPONENTS

FIXINGS: Rods, Anchors, Screws, Washers, Nuts To suit Concrete, Steel and Timber Substrates (Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
MB50 STAINLESS	301510	M10x50mm	SS	STAINLESS	THREADED	FIXING	Internal &	
STEEL RODS	301499	M10x100mm	SS	STEEL	ROD	ROD	COMPONENT	External
Contraction of the local division of the loc	301501	M10x115mm	SS					
	301497	M10x140mm	SS					
							၂ရှို	
MB50 STAINLESS	301292	M10x100mm	SS	STAINLESS	LAG SCREW	FIXING	Internal &	
STEEL LAG SCREW	301294	M10x120mm	SS	STEEL		COMPONENT	External	
							∎ ∰ ¶P	
MB50 NUT	301025	M10	SS	304 STAINLESS	HEX / DOME	FIXING	Internal &	
(HEX / DOME)	301023	M10	PS	STEEL	NUT	COMPONENT	External	
							_∰ ¶	
WASHERS (ROUND /	301583	M10 x 30mm dia. x 2mm	SS	STAINLESS STEEL	WASHER	FIXING COMPONENT	Internal & External	
SQUARE)	301601	M10 Spring Washer	SS					
	301600	M10 50 x 50 x 3mm Square	SS				<u>ଲ</u> ୍ଲ କୁ	
)							0	
GASKETS (ROUND)	300598	0.8mm 50mm dia.	OPAQUE	BLACK FIBRE AND OPAQUE	GASKET	FIXING COMPONENT	Internal & External	
	300588 0.8mm 50mm dia.	BLACK FIBRE	(OPTION)	*Opaque (LDPE) is for internal applications, Black				
$\mathbf{\bullet}$					Fibre is for Internal and External applications.		မ္လာ ရှင	

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HARDWARE





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BALUSTRADE RAIL SYSTEM



S25 Link Rail



- 25 x 21mm 2205 Stainless Steel.
- Suitable for 10mm or 12mm Glass Thickness.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel finish standard, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL	300738	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
		OVERALL SIZE: 25 x 21mm					*
	300118	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)			ON REQUEST: POWDERCOAT	2205 STAINLESS WALL STEEL BRACKET	BRACKET	LINK RAIL COMPONENT	External
S25 LINK RAIL	301854	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External



BALUSTRADE RAIL SYSTEM

S25 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL VERTICAL ADJUSTABLE JOINER	300863	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300862	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL FIXED 90 DEGREE CORNER	300861	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External External
S25 LINK RAIL INLINE JOINER	300864	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	INLINE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 END CAP	300512	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	END CAP	BALUSTRADE LINK RAIL COMPONENT	Internal & External
LINK RAIL LOCTITE 243	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL RUBBER GASKET	302091	Suits S25 Rail PER METRE LENGTH GLASS THICKNESS: 12mm	BLACK	RUBBER	RUBBER GASKET FOR S25 LINK RAIL	BALUSTRADE LINK RAIL COMPONENT	Internal Ə External
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS STEEL	GRUB SCREW	BALUSTRADE LINK RAIL FIXING	Internal Ə External



HARDWARE WARRANTY

BALUSTRADE RAIL SYSTEM S40 Link Rail





- 40 x 30mm 2205 Stainless Steel.
- Suitable for 12mm 21.5mm Glass Thickness.
- Rubber gasket available to suit respective glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel standard finish, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	300739	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 12 – 21.5mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
P		OVERALL SIZE: 40 x 30mm					æ
S40 LINK RAIL	300156	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External
S40 LINK RAIL	301855	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External



BALUSTRADE RAIL SYSTEM

S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL VERTICAL ADJUSTABLE	300868	Suits S40 Rail	SS ON REQUEST:	2205 STAINLESS STEEL	ADJUSTABLE VERTICAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
JOINER			POWDERCOAT		JUNEN	COMPONENT	
S40 LINK RAIL HORIZONTAL	300867	Suits S40 Rail	SS	2205 STAINLESS	ADJUSTABLE	BALUSTRADE	Internal &
ADJUSTABLE JOINER			ON REQUEST: POWDERCOAT	STEEL	HORIZONTAL JOINER	LINK RAIL COMPONENT	External
							
S40 LINK RAIL	300866	Suits S40 Rail	SS	2205 STAINLESS	90 DEGREE	BALUSTRADE	Internal &
FIXED 90 DEGREE CORNER			ON REQUEST: POWDERCOAT	STEEL	CORNER CONNECTOR	LINK RAIL COMPONENT	External
S40 LINK RAIL	300869	Suits S40 Rail	SS	2205 STAINLESS	INLINE JOINER	BALUSTRADE	Internal &
INLINE JOINER			ON REQUEST:	STEEL		LINK RAIL COMPONENT	External
			POWDERCOAT				
S40 END CAP	300513	Suits S40 Rail	SS	2205 STAINLESS	END CAP	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
LINK RAIL LOCTITE 243	300961	Suits S40 Rail	ADHESIVE	50MM BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL	Internal & External
					ADRESIVE	COMPONENT	
S40 LINK RAIL RUBBER GASKET	302092	Suits S40 Rail	BLACK	RUBBER	RUBBER GASKET FOR	BALUSTRADE LINK RAIL	Internal & External
		PER METRE LENGTH GLASS THICKNESS: 12-13.5mm			S40 LINK RAIL	COMPONENT	
S40 LINK RAIL RUBBER GASKET	302093	Suits S40 Rail	BLACK	RUBBER	RUBBER GASKET FOR S40 LINK RAIL	BALUSTRADE LINK RAIL FIXING	Internal &
		PER METRE					External
		LENGTH GLASS THICKNESS: 12-15mm					

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HARDWARE WARRANTY



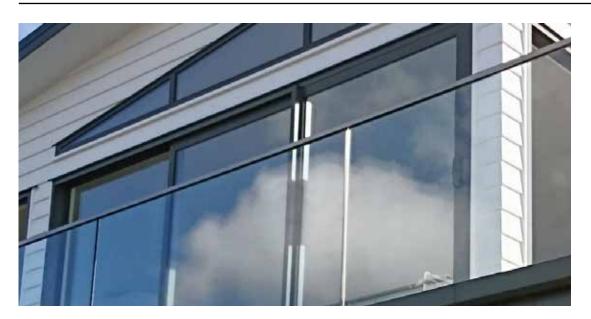
BALUSTRADE RAIL SYSTEM



S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL RUBBER GASKET	302094	Suits S40 Rail	BLACK	RUBBER	RUBBER GASKET FOR S40 LINK RAIL	BALUSTRADE LINK RAIL COMPONENT	Internal & External
		PER METRE LENGTH					
-		GLASS THICKNESS: 13-16mm					[
S40 LINK RAIL RUBBER GASKET	302095	Suits S40 Rail	BLACK	RUBBER	RUBBER GASKET FOR S40 LINK RAIL	BALUSTRADE LINK RAIL COMPONENT	Internal & External
		PER METRE LENGTH					
		GLASS THICKNESS: 16-19mm					
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS STEEL	GRUB SCREW	BALUSTRADE LINK RAIL FIXING	Internal & External

BALUSTRADE RAIL SYSTEM Edgetec[®] 220 Link Rail



Aluminium LinkRail 38x30mm – For 12mm and 15mm Glass

- 38 x 30mm Aluminium Link Rail.
- Available in Natural Anodisied Finish 20 microns as standard or Silver Frost powdercoat. Special colours on request (Powdercoating or Anodising).
- Rubber gasket available to suit 12mm or 15mm glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.





BALUSTRADE RAIL SYSTEM

Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	300728	5800mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL	300729	5800mm	SILVER FROST			LINK RAIL	External
FULL LENGTH	300727	5800mm	MILL FINISH				
		GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	300725	2900mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL	300726	2900mm	SILVER FROST			LINK RAIL	External
HALF LENGTH	300724	2900mm	MILL FINISH				
		(Half Length) GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	300593	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 12mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300594	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 15mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT *For a 5.8m Link Rail x2 rubber gaskets lengths are required	
EDGETEC® 220 LINK RAIL INLINE JOINER	300847	80x22.8x5mm	MILL	ALUM 6063	180 DEGREE STRAIGHT JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
EDGETEC [®] 220	300848	50x50x5mm	MILL	ALUM 6063	90 DEGREE	BALUSTRADE	Internal &
LINK RAIL 90 DEGREE JOINER					CORNER JOINER	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300493	38.4 x 30.4mm	ANOD – Natural	ALUM 6063	END CAP	BALUSTRADE	Internal &
END CAP	300494	38.4 x 30.4mm	SILVER FROST				External
	300492	38.4 x 30.4mm	MILL			COMPONENT	
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220 LINK RAIL FIXED 90 DEGREE	301985	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	90 DEGREE CORNER	BALUSTRADE LINK RAIL	Internal & External
CORNER	301986	Suits Edgetec® 220 Rail	MILL		CONNECTOR	COMPONENT	
		(Component)	ON REQUEST: POWDERCOAT				





HARDWARE WARRANTY

BALUSTRADE RAIL SYSTEM



Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC® 220	301987	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	ADJUSTABLE	BALUSTRADE	Internal &
LINK RAIL HORIZONTAL ADJUSTABLE JOINER	301988	220 Rail Suits Edgetec® 220 Rail	MILL		HORIZONTAL JOINER	LINK RAIL COMPONENT	External
		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220 LINK RAIL	301989	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	ADJUSTABLE VERTICAL	BALUSTRADE LINK RAIL	Internal & External
VERTICAL ADJUSTABLE JOINER	301990	Suits Edgetec® 220 Rail	MILL		JOINER	COMPONENT	
i		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220	301003	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)	301004	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC [®] 220	301005	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)	301006	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
No. 1		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC [®] 220	301002	100 x 65mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT	301149	100 x 65mm	MILL		BRACKET	LINK RAIL COMPONENT	External
-		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	L
EDGETEC® 220 WALL BRACKET	301991	60 x 46mm	SILVER FROST	ALUM 6063	POST END	BALUSTRADE	Internal &
WALL BHACKE I POST END MOUNT* *Suits AP65 Series	301992	60 x 46mm	MILL	4	MOUNT FOR AP65	LINK RAIL COMPONENT	External
Aluminium Post		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
SCREW	301993	6G x 1/4" Sq	SS	304 STAINLESS	SCREW	PAN HEAD	Internal &
® {		GLASS THICKNESS: 12mm, 15mm		STEEL		SCREW SUITS COMPONENT 300847 301985 301986 301003 301004 301005 301006 301002 301109 301149 301991 301992	
SILICONE – STRUCTURAL GLAZING	300011	V60	ADHESIVE	CARTRIDGE	SILICONE	FIXING COMPONENT	Internal & External



MB50 SYSTEM Disc Options



MB50 Stepped Disc



MB50 Threaded Round Edge Disc



MB50 CSK Standard Disc



MB50 CSK Round AGA Disc 1

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Design Tables

Safety From Falling Barriers

Occupancy A

All areas within or serving one dwelling including stairs, landings etc. but excluding external balconies and edges of roofs.

Glass Thickness t (mm)	Maximum Height H	Substrate	Fixing	Dimension	s (mm)	D	esign loads to	deck structure	•
	(mm)	Material	Max x	Min y	Мах у	M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12, 13.52, 15.2	1150	тор	500	110	600	1.04	5.60	-	-
15, 17.2, 17.52	1150	T, C, S	500	110	600	1.04	5.60	-	-

Occupancy A/C3/B/E As per NZS1170.1 Table 3.3

Glass Thickness	Maximum	Substrate	Fixing Dimensions (mm)			Design loads to deck structure			
t (mm)	Height H (mm)	Material	Max x	Min y	Мах у	M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12, 13.52, 15.2	950	T, C, S	425	110	600	1.07	5.09	1.68	2.37
	1150	T, C, S	400	110	600	1.18	5.20	1.52	2.14
13.52, 15.2	1100	T, C, S	400	110	600	1.24	5.40	1.45	2.05
	1150	C,S	400	110	600	1.29	5.60	1.39	1.96
15, 17.2, 17.52	950	T, C, S	475	110	600	1.07	5.68	1.68	2.37
	1050	T, C, S	425	110	600	1.18	5.52	1.52	2.14
	1100	T, C, S	400	110	600	1.24	5.40	1.45	2.05
	1150	C, S	400	110	600	1.29	5.60	1.39	1.96
	1250	C, S	400	110	600	1.41	6.01	1.28	1.80

Side Fix Free Standing Pool Fences

(Not protecting a fall of 1.0m or more) Steel, Concrete and Timber

Glass Thickness t (mm)	NZS3604 Wind	Maximum	Substrate	Fixing	Dimensions	s (mm)	Design loac struc	
	Zone	Height H (mm)	Material	Max x	Min y	Max y	M* (kNm/m)	T* (kN)
12	Up to High	1250	T, C, S	400	110	600	0.90	3.85
15	Very High	1250	T, C, S	400	110	600	1.16	4.97
17.2	Extra High	1250	T, C, S	400	110	600	1.41	6.01

Key:

T = Timber, C = Concrete, S = Steel



Design Tables

Glass thickness key:

Glass	Inner layer ³	laterlever thickness	Outon louon sloop	Panel siz	ze requirements
Thickness t (mm)	glass thickness (mm)	Interlayer thickness (mm) and type	Outer layer glass thickness (mm)	Minimum panel width (mm)	Maximum panel width (mm)
12	-	-	-	1000	1700/1900 (see below)
13.52	6	1.52 SAFELITE® STF (Sentry®)	6	1700	Refer manufacturing limits
15	-	-	6	1000	1700/1900 (see below)
15.2	8	1.2 SAFELITE® EVA	-	1000	1700/1900 (see below)
17.2	17.2 8 1.2 SAFELITE® EVA 17.52 8 1.52 SAFELITE® STF (Sentry®)		8	1000	1700/1900 (see below)
17.52			8	1100	Refer manufacturing limits

Note: Inner layer refers to balcony side

Maximum panel widths for Interlinking Rail/Bracket systems:

Applies where barrier is protecting a fall of 1.0m or more

Interlinking Rail System	Maximum panel width (mm)	Position
S25 S40 Edgetec® 220	1700 1700/1900 1700/1900	on glass only HB50 bracket/on glass HB50 bracket/on glass
MFG SB Bracket on SAFELITE® only	1900	Max 200mm from top of glass

NOTES:

- Refer to elevation drawings for Height 'H'.
- The specifier must ensure the balustrade height above floor level requirements as per the NZ Building Code are complied with.
- Design loads are in accordance with AS/NZS 1170.1:2002 table 3.3 and NZBC B1/VM1 and DBH Guidance on Barrier Design (March 2012).
- \cdot M* Θ T* denote bending moment (kNm/m width) and tension loads (kN/fixing) respectively to be supported by the deck/pool structure.
- Capacity of all substructure is to be verified by building engineer or checked for accordance with NZS3604 (where applicable) prior to fixing.
- Fixing centres in tables above are applicable to concrete, steel and (where allowed) timber. Refer to fixing detail drawings for further details.
- All glass is to be toughened safety glass supplied by Metro Performance Glass, in either TEMPAFLOAT® Monolithic, SAFELITE® EVA Laminated or SAFELITE® STF (Sentry®) Laminated variants subject to requirements of the tables above.
- Glass & interlayer thicknesses shown are nominal thickness. Table is based on glass minimum tolerance as per NZS 4223.1:2008.
- Refer to the relevant fixing details on drawings: MB50/C/RA, MB50/S/RN (Open), MB50/S/RN (Hollow), MB50/T/RN, MB50/T/LS
- Design tables only valid for use with MB50 balustrade system.
- SLS Deflection in this instance is above recommended limit of 30mm excluding rotation in the supporting structure.
- In all cases the MB50 fixings must be fixed with Nylon washer directly to the relevant supporting structure.
- For designs outside the scope of these tables and ULS wind pressures exceeding those shown, specific design is required.
- Minimum glass strength 100MPa, all edges polished.
- Maximum 10mm tolerance allowed to H heights noted in table.
- Monolithic glass options only applicable for situations where all parts of glazing are within 5000mm of adjacent lower floor/ ground below.
- Pool fences listed above refer to free standing structures where safety from falling is not applicable, design is based on Importance Level 1.
- For safety from falling barriers other than 'A occupancy', fixing to timber only suitable for H \leq 1100mm.

Post failure requirements:

Applies where barrier is protecting a fall

Requirement Interlinking rail required

in all cases Interlinking rail or SB

brackets required all cases

No interlinking rail required,

minimum panel widths apply

of 1.0m or more

Glass Type

TEMPAFLOAT®

SAFELITE® EVA

SAFELITE[®] STF

(Sentry[®])



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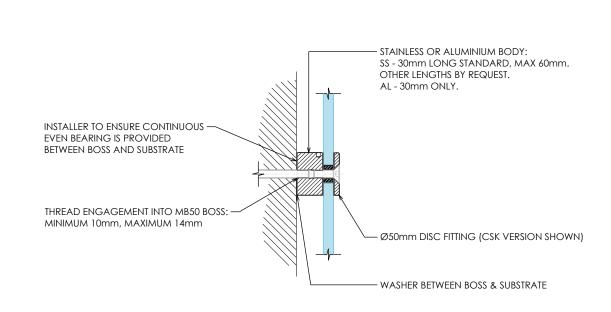
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50MM DOUBLEDISC MB50 BALUSTRADE SYSTEM

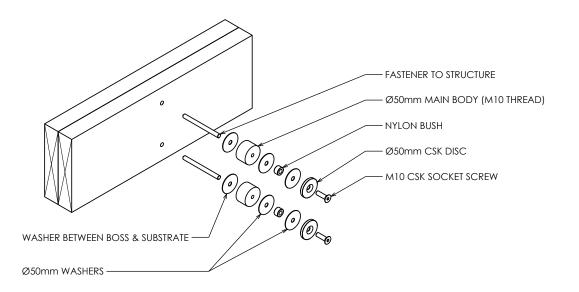
Section & Exploded Views

SECTION VIEW

DOUBLEDISC MB50 STANDARD FITTING



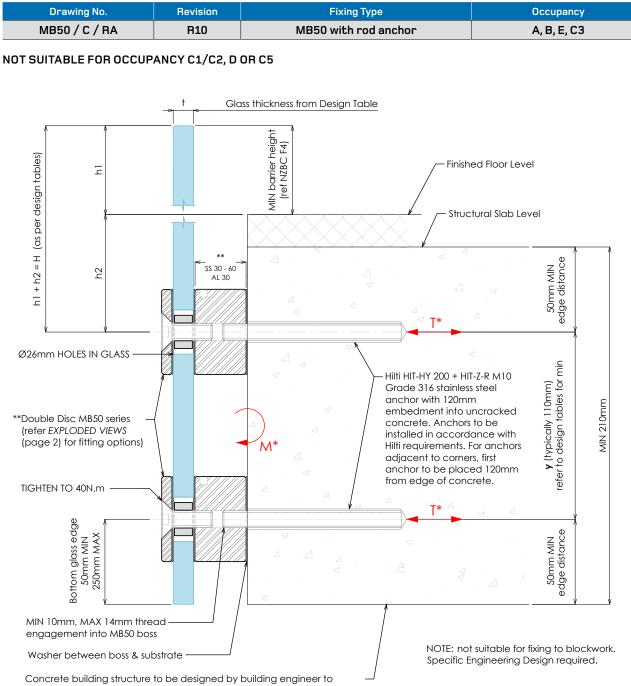
DOUBLEDISC MB50 STANDARD FITTING EXPLODED VIEW







Concrete Fixing Detail



Concrete building structure to be designed by building engineer to support loads as specified on Double Disc MB50 balustrade system design table. Minimum 25MPa uncracked concrete, 210mm Min thickness.

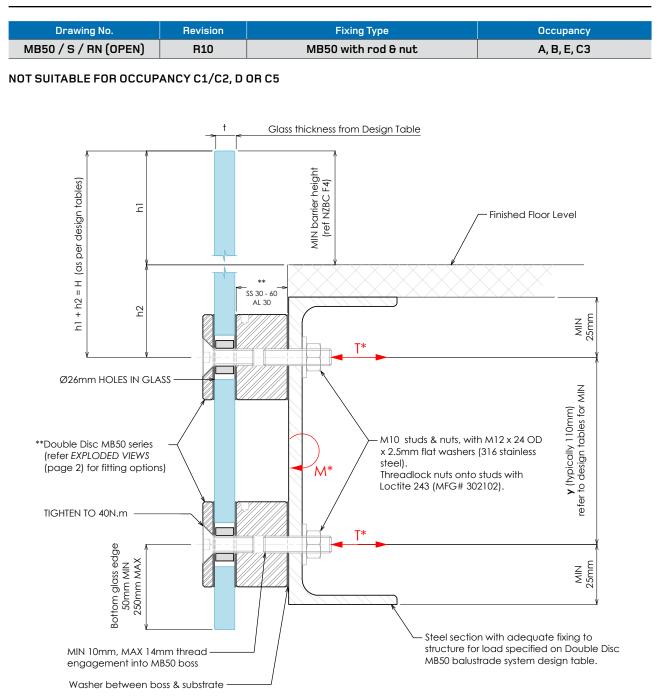
Refer to DoubleDisc MB50 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M* and T* specified on DoubleDisc MB50 balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with DoubleDisc MB50 balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) No substitution allowed any variation from the details above and design tables will require specific design.



Steel Fixing Detail



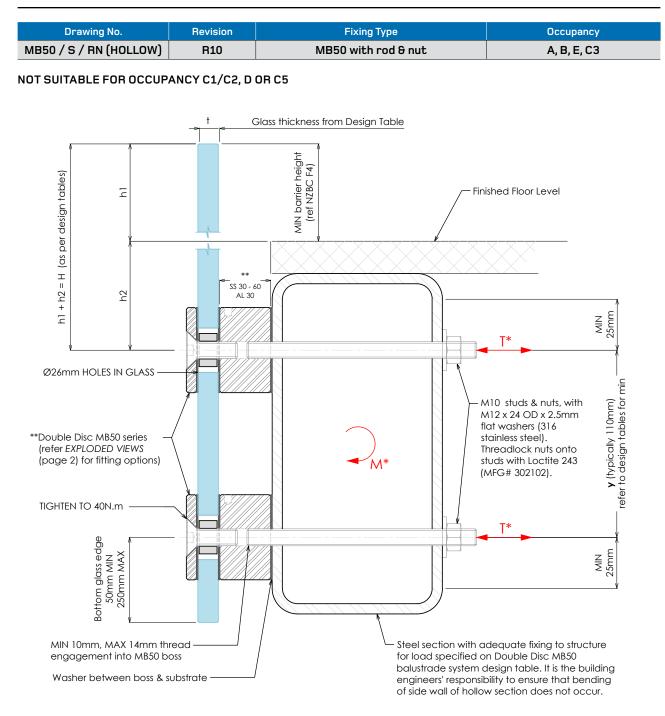
Refer to DoubleDisc MB50 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M* and T* specified on DoubleDisc MB50 balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with DoubleDisc MB50 balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) For fixing to steel substrates, the installer shall ensure the bolts are tightened to a "snug-tight" level as defined in NZS3404.
- 5) No substitution allowed any variation from the details above and design tables will require specific design.



Steel Fixing Detail



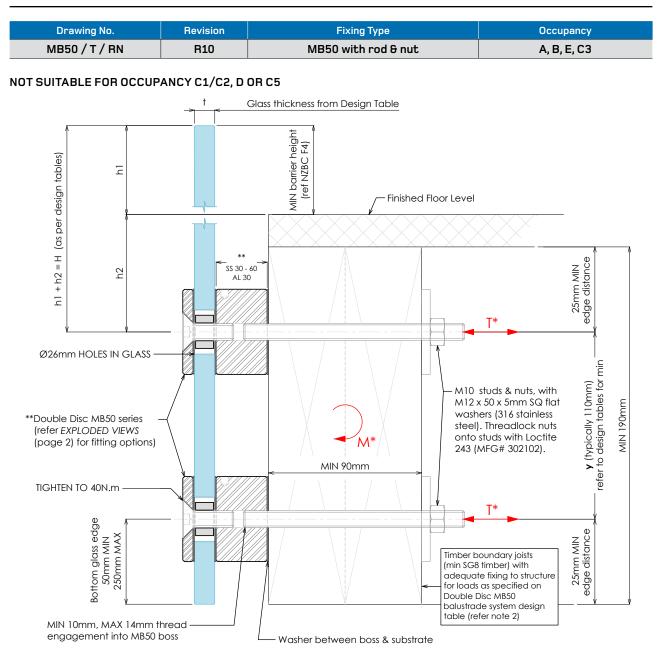
Refer to DoubleDisc MB50 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M* and T* specified on DoubleDisc MB50 balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with DoubleDisc MB50 balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) For fixing to steel substrates, the installer shall ensure the bolts are tightened to a "snug-tight" level as defined in NZS3404.
- 5) No substitution allowed any variation from the details above and design tables will require specific design.



Timber Fixing Detail



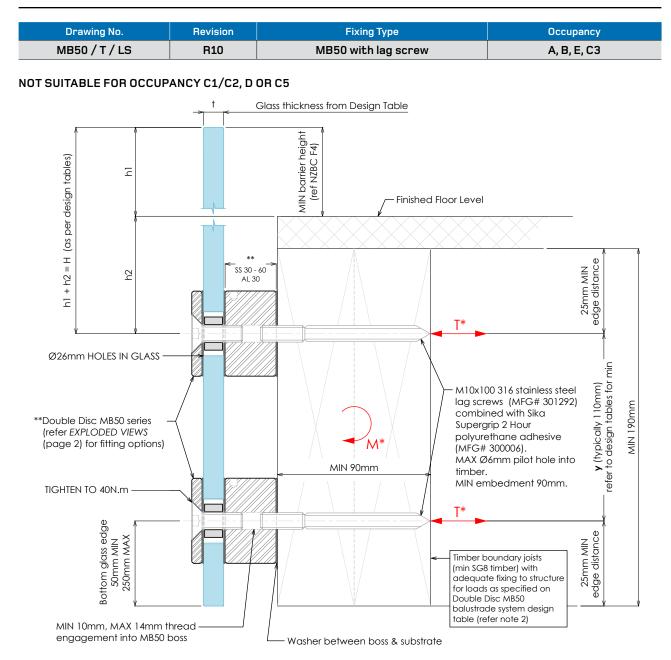
Refer to DoubleDisc MB50 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- Capacity of structure is to be of sufficient strength to support loads M* and T* specified on DoubleDisc MB50 balustrade system design table. Structure capacity to be verified by building engineer where applicable or checked to NZS3604 requirements prior to fixing balustrade.
- 2) Timber decks designed to NZS 3604:2011 guidelines will meet loading requirement, except for decks including cantilever floor joists where specific design is required.
- 3) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with DoubleDisc MB50 balustrade system design table.
- 4) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 5) For fixing to timber substrates, the installer shall ensure that the bolt / coach screw is sufficiently tightened to reduce movement of the bolt head and washer. Care should be taken not to over tighten the fixings that would cause crushing of the timber or compromise the thread leading to anchor pull-out.
- 6) No substitution allowed any variation from the details above and design tables will require specific design.
- 7) Fixings to timber must be re-tightened 2 months after installation and periodically thereafter to allow for timber shrinkage.



Timber Fixing Detail



50MM DOUBLEDISC MB50 SYST

Refer to DoubleDisc MB50 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- Capacity of structure is to be of sufficient strength to support loads M* and T* specified on DoubleDisc MB50 balustrade system design table. Structure capacity to be verified by building engineer where applicable or checked to NZS3604 requirements prior to fixing balustrade.
- 2) Timber decks designed to NZS 3604:2011 guidelines will meet loading requirement, except for decks including cantilever floor joists where specific design is required.
- Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with DoubleDisc MB50 balustrade system design table.
- 4) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 5) For fixing to timber substrates, the installer shall ensure that the bolt / coach screw is sufficiently tightened to reduce movement of the bolt head and washer. Care should be taken not to over tighten the fixings that would cause crushing of the timber or compromise the thread leading to anchor pull-out.
- 6) No substitution allowed any variation from the details above and design tables will require specific design.
- 7) Fixings to timber must be re-tightened 2 months after installation and periodically thereafter to allow for timber shrinkage.

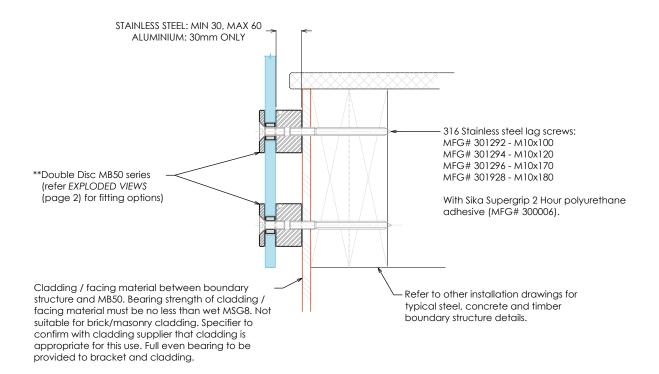


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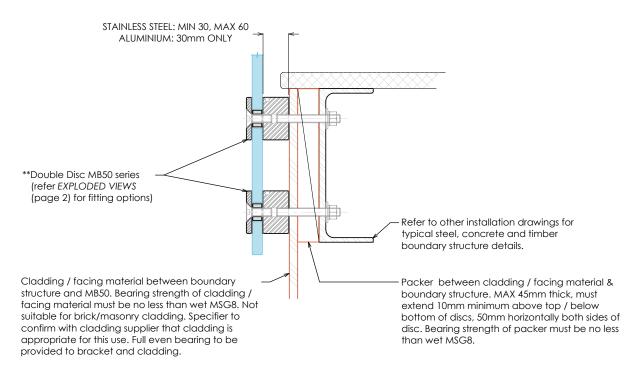
50MM DOUBLEDISC MB50 BALUSTRADE SYSTEM

Cladding / Fascia Installation Details

CLADDING / FASCIA PANEL DETAIL



CLADDING / FASCIA PANEL DETAIL WITH CAVITY





50mm DOUBLEDISC MB50 SYSTEM

SAFELITE[®] STF (Sentry[®]) 13.52mm

PANEL WIDTH NOTES:

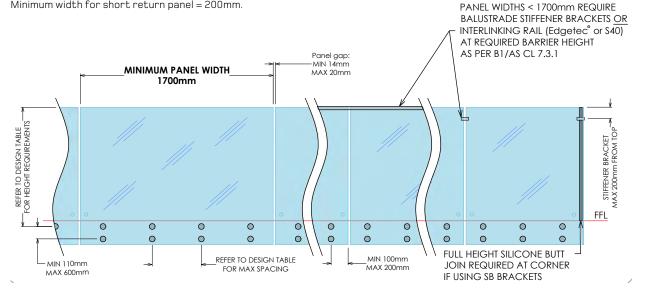
Balustrade stiffener brackets or interlinking rail required for panels <1700mm.

Minimum panel width where two or more panels are in a straight line = 1000mm.

Minimum width for short return panel = 200mm.

Besidential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



50mm DOUBLEDISC MB50 SYSTEM SAFELITE® STF (Sentry®) 17.52mm

PANEL WIDTH NOTES:

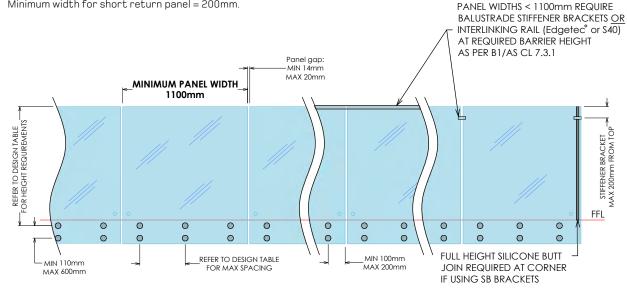
Balustrade stiffener brackets or interlinking rail required for panels <1100mm.

Minimum panel width where two or more panels are in a straight line = 1000mm.

Minimum width for short return panel = 200mm.

17.52mm – Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



IMPORTANT NOTE: The substructure to which the balustrade is to be attached must be designed by a structural engineer to resist the relevant balustrade actions as per B1/VM1.



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50MM DOUBLEDISC MB50 ELEVATION

SAFELITE[®] EVA Glass

50mm DOUBLEDISC MB50 SYSTEM

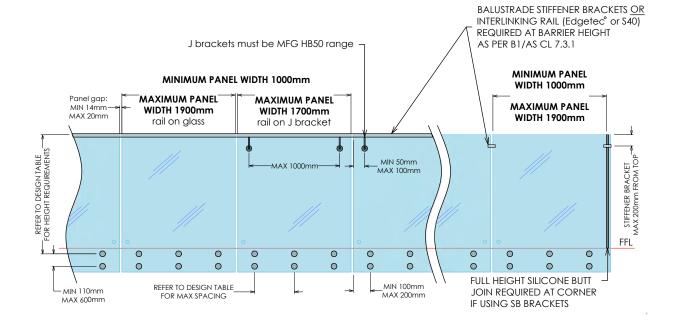
SAFELITE® EVA 15.2mm SAFELITE® EVA 17.2mm

PANEL WIDTH NOTES:

Minimum panel width where two or more panels are in a straight line = 1000mm. Minimum width for short return panel = 200mm.

Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



IMPORTANT NOTE: The substructure to which the balustrade is to be attached must be designed by a structural engineer to resist the relevant balustrade actions as per B1/VM1.



TEMPAFLOAT® Glass

50mm DOUBLEDISC MB50 SYSTEM

TEMPAFLOAT® 12mm

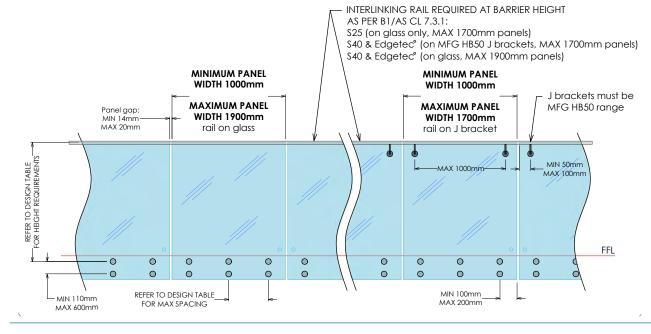
PANEL WIDTH NOTES:

Minimum panel width where two or more panels are in a straight line = 1000mm.

Minimum width for short return panel = 200mm.

Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



50mm DOUBLEDISC MB50 SYSTEM

TEMPAFLOAT® 15mm

PANEL WIDTH NOTES:

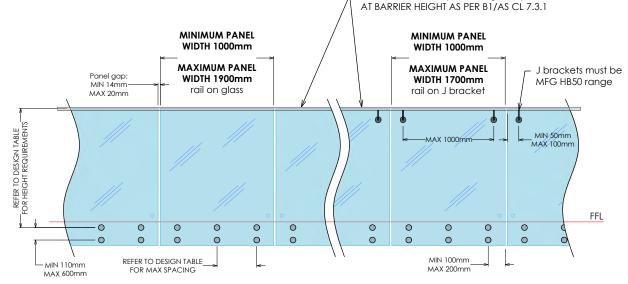
Minimum panel width where two or more panels are in a straight line = 1000mm.

Minimum width for short return panel = 200mm.

Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.

INTERLINKING RAIL (\$40 or Edgetec[®]) REQUIRED



IMPORTANT NOTE: The substructure to which the balustrade is to be attached must be designed by a structural engineer to resist the relevant balustrade actions as per B1/VM1.



50MM DOUBLEDISC MB50 ELEVATION

Pool Fence

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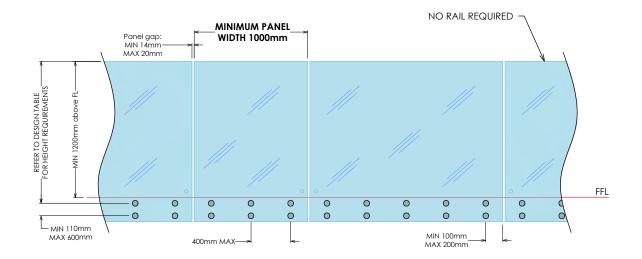
50MM DOUBLEDISC

50mm DOUBLEDISC MB50 SYSTEM POOL FENCE ONLY TEMPAFLOAT® 12 & 15mm

APPLIES TO FREE STANDING POOL FENCES NOT PROTECTING A FALL OF > 1000mm.

As of Jan 2017, complies with Building Code clause F9 ϑ section 162C of the building Act.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.

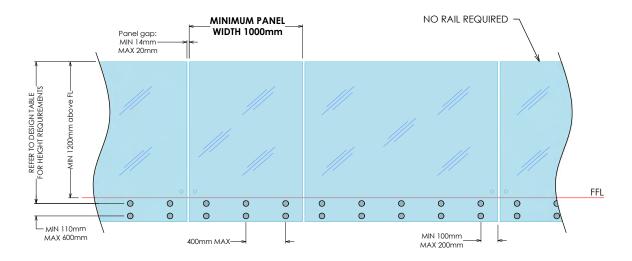


50mm DOUBLEDISC MB50 SYSTEM POOL FENCE ONLY SAFELITE® EVA 17.2mm

APPLIES TO FREE STANDING POOL FENCES NOT PROTECTING A FALL OF > 1000mm.

As of Jan 2017, complies with Building Code clause F9 & section 162C of the building Act.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



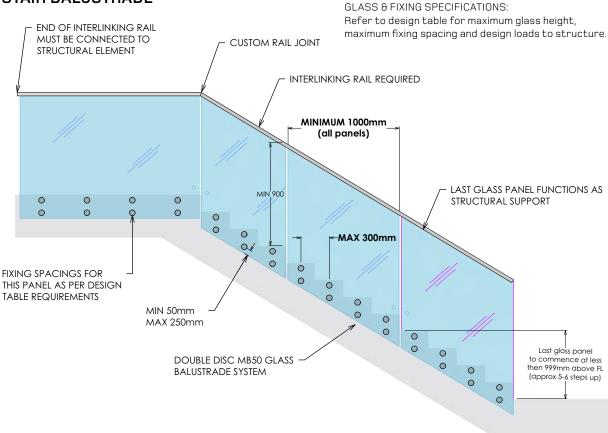
IMPORTANT NOTE: The substructure to which the balustrade is to be attached must be designed by a structural engineer to resist the relevant balustrade actions as per B1/VM1.



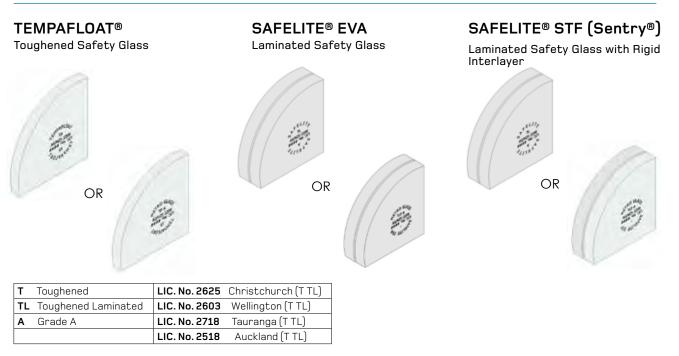
Stair Balustrade

50mm DOUBLEDISC MB50 SYSTEM

STAIR BALUSTRADE



IMPORTANT NOTE: The substructure to which the balustrade is to be attached must be designed by a structural engineer to resist the relevant balustrade actions as per B1/VM1.





SYSTEM

0 2

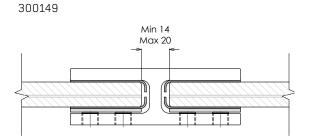
50MM DOUBLEDISC MB

50MM DOUBLEDISC MB50 BALUSTRADE SYSTEM

Stiffener Brackets

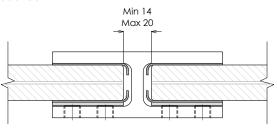
STRAIGHT BRACKET

13.5-15.5mm GLASS



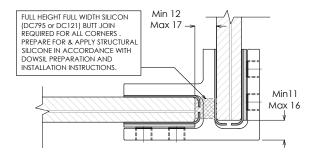
STRAIGHT BRACKET

17.52 – 21.52mm GLASS 300150



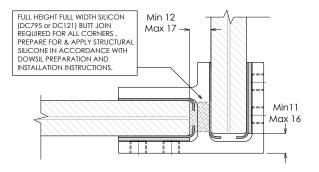
CORNER BRACKET

13.5–15.5mm GLASS 300151



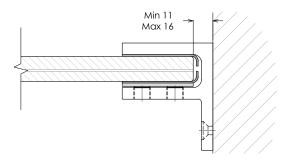
CORNER BRACKET

17.52 – 21.52mm GLASS 300152



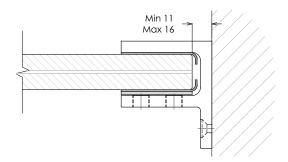
WALL BRACKET

13.5–15.5mm GLASS 300153



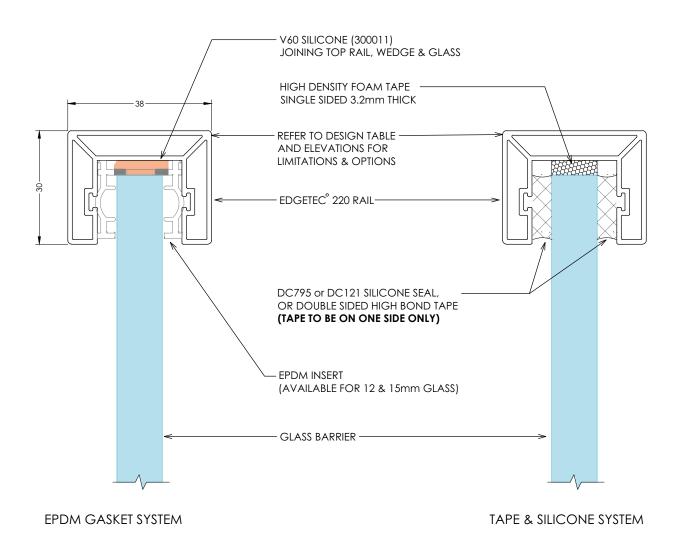
WALL BRACKET

17.52 - 21.52mm GLASS 300154





Edgetec[®] 220 Link Rail



INSTALLATION NOTES:

- 1. Cut short lengths of gasket (nom 50mm) and place at approximately 700mm centres.
- 2. Cut / adjust interlinking rail to correct dimensions and test in position.
- 3. Remove all parts from glass barrier and install full cut lengths of gasket to top edge of glass barrier.
- 4. Assemble top rail, joiners and suitable end plates.
- 5. Place blobs of v60 silicone in every gasket hole.
- 6. Place top rail extrusion, joiners and end plates in position on glass barrier, clipping firmly to gasket.
- 7. Tape assembled components down to glass barrier and wait 24hrs to fully bond.
- 8. Clean up any excess silicone.

Note: rail ends must be attached to structure or structural post. Extrusion joins must have a suitable joiner plate

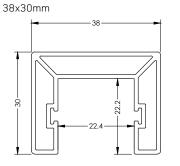
IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



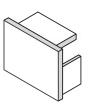
Edgetec[®] 220 Link Rail

Edgetec[®] 220 Rail for 12mm & 15mm Glass Full Length (5800mm) 300729

Half Length (2900mm) 300726



Edgetec® 220 Rail End Cap (300494) 38x30mm



Edgetec® 220 Rail

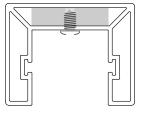
Black EPDM Gasket (2900mm length) for 12mm Glass 300593 for 15mm Glass 300594



Joiners: (After cutting extrusions to length)

- With Joiner in place, spot drill from below for position

- Drill out to joiner to 3mm dia, extrusion to 4mm dia
- Use No 6 x 1/4in SS ST Pan sq drive Screw (301993)

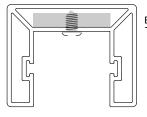


Joiners both 22.5 x 5mm Aluminium

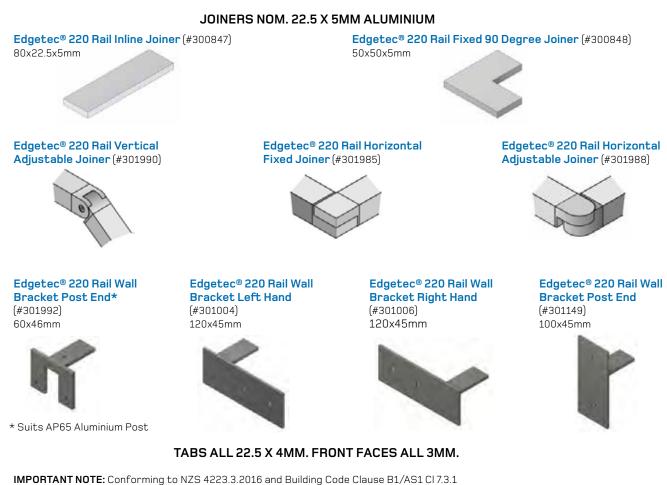
End Plates: (After cutting extrusions to length)

- With End Plate in place, spot drill from below for position

- Drill out to SS tab to 3mm dia, extrusion to 4mm dia
- Use No 6 x 1/4in SS ST Pan sq drive Screw (301993)
- End Plate must be securely attached to Post or structure.



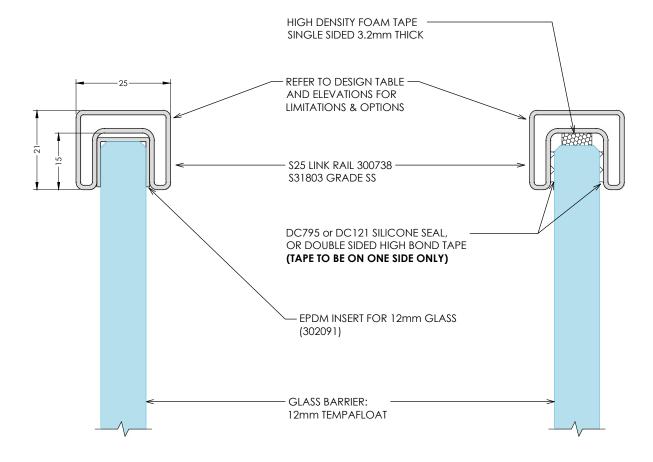
End Plate Tabs all 22.5 x 4mm SS.



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S25 Link Rail

S25-01 S25 RAIL - TYPICAL INSTALLATIONS



EPDM GASKET SYSTEM

TAPE & SILICONE SYSTEM

NOTES:

- 1. Interlinking rail details are only to be used on metro performance glass. Cantilevered glass balustrades.
- 2. Prepare for and apply DC795 & DC121 structural silicone in accordance with dow. Corning preparation and installation instructions.
- 3. Interlinking rail splice & corner connections are shown on drawings S25-02 & S25-03
- 4. Interlinking rail end connection brackets 8 attachment details are shown on drawings S25-04 to S25-08.
- 5. All screws to be stainless steel with a minimum ultimate shear strength of 3.5kN (per Screw).
- 6. Link rail section and connection pieces to be S31803 grade stainless steel, In accordance with NZS 4673:2001.
- 7. Refer to warranty & maintenance pages for periodic inspection, cleaning & maintenance requirements.

IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



S25 Link Rail

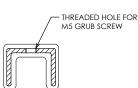
S25-02 S25 RAIL - SPLICE CONNECTION DETAIL

All fixings to be stainless steel

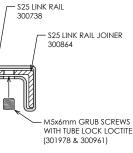
S25 LINK RAIL SECTION 300738

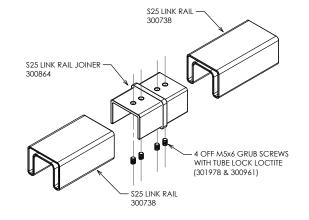
Ø5mm HOLE FOR 4 OFF M5 THREADED HOLE M5 GRUB SCREW S25 LINK RAIL FOR GRUB SCREWS Ā 300738 J I _ C _ _ ┋┇╝═┸╞┖╕ _____ _____ S25 LINK RAIL JOINER A S25 LINK RAIL 300864 300738

S25 LINK RAIL INLINE JOINER 300864



SECTION A-A





S25 LINK RAIL - SPLICE CONNECTION ELEVATION

S25-03 S25 RAIL - 90° CORNER CONNECTION DETAIL

All fixings to be stainless steel

S25 LINK RAIL SECTION S25 LINK RAIL - 90° CORNER CONNECTION ELEVATION 300738 Ø5mm HOLE FOR S25 LINK RAIL 90° CORNER DRILL & TAP 4 OFF M5 THREADED M5 GRUB SCREW 300861 В HOLES FOR GRUB SCREWS ΤÞ =========== S25 LINK RAIL 300738 В S25 LINK RAIL 90° CORNER **SECTION B-B** 300861 S25 LINK RAII S25 LINK RAIL 90° CORNER 300738 300861 _____ M5x6mm GRUB SCREWS S25 LINK RAIL FIXED 90° CORNER WITH TUBE LOCK LOCTITE 300861

IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



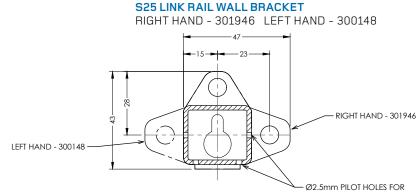
S25 Link Rail

S25-04 S25 RAIL WALL BRACKET

All fixings to be stainless steel

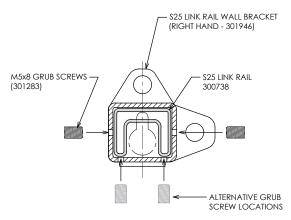
S25 LINK RAIL SECTION



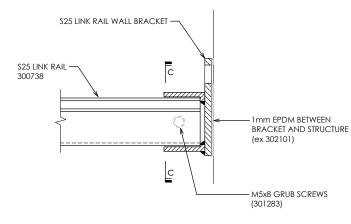


Ø2.5mm PILOT HOLES FOR 2 x M5 GRUB SCREWS

SECTION C-C



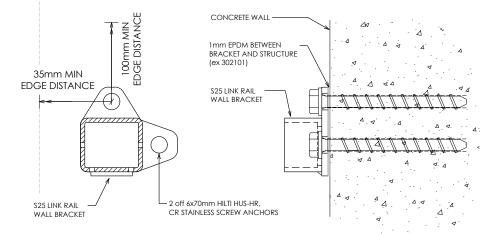
S25 LINK RAIL - END BRACKET SECTION



S25-05 S25 RAIL - END BRACKET CONCRETE WALL ATTACHMENT All fixings to be stainless steel

NOTES:

- Concrete wall is to be designed by project structural engineer for loads Imposed by balustrade. ULS Point load, n* = 0.9kN -Inwards, outwards or down.
- 2. Concrete wall to be minimum 140mm thick.
- Concrete wall must be reinforced θ is to be designed θ detailed in accordance with NZS3101.
- Minimum concrete strength = 20MPa.



IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

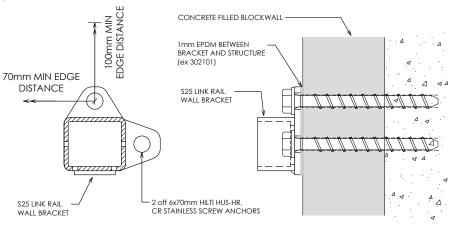


S25 Link Rail

S25-06 S25 RAIL - END BRACKET BLOCKWALL ATTACHMENT All fixings to be stainless steel

NOTES:

- Blockwall is to be designed by Project structural engineer for loads imposed by Balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Minimum blockwall thickness = 140mm.
- Blockwall must be corefilled / Reinforced θ is to be designed θ detailed in Accordance with NZS4230 or NZS4229.
- 4. Minimum corefill concrete strength = 17.5MPa.



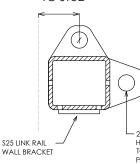
S25-07 S25 RAIL - END BRACKET WEATHERBOARD ATTACHMENT

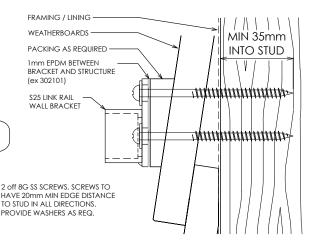
All fixings to be stainless steel

NOTES:

- Timber stud wall is to be designed by project Structural engineer for loads imposed by balustrade. ULS Point load, n* = 0.9kN - Inwards, outwards or down.
- 2. Minimum stud size = 90x45.
- 3. Minimum timber grade = SG8.
- Timber stud wall to be designed θ detailed in accordance with NZS3603 or NZS3604.

20mm MIN EDGE DISTANCE TO STUD



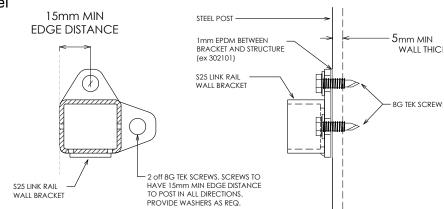


S25-08 S25 RAIL - END BRACKET STEEL POST ATTACHMENT

All fixings to be stainless steel

NOTES:

- Steel post is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Building designer to ensure durability requirements of connection are met.
- 3. Minimum steel post wall thickness = 5mm.
- 4. Minimum steel grade = 300MPa.

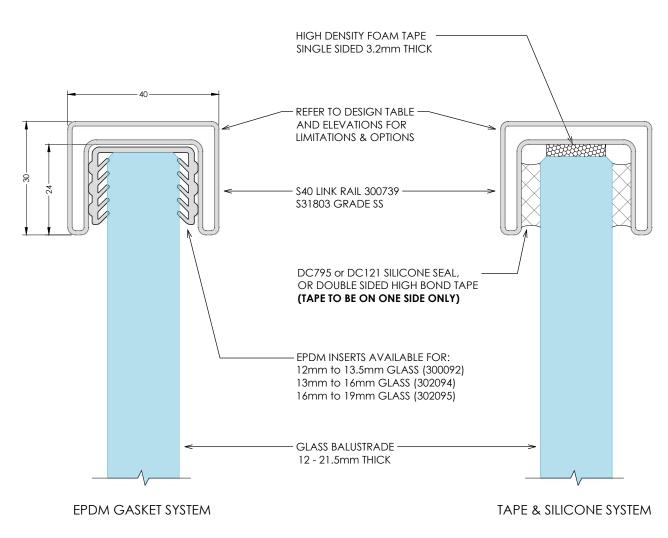


IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



S40 Link Rail

S40-01 S40 RAIL - TYPICAL INSTALLATIONS



NOTES:

- 1. Interlinking rail details are only to be used on metro performance glass cantilevered glass balustrades.
- 2. Prepare for and apply DC795 & DC121 structural silicone in accordance with dow corning preparation and installation instructions.
- 3. Interlinking rail splice & corner connections are shown on drawings S40-02 & S40-03.
- 4. Interlinking rail end connection brackets & attachment details are shown on drawings S40-04 to S40-08.
- 5. All screws to be stainless steel with a minimum ultimate shear strength of 3.5Kn (per screw).
- 6. Link rail section and connection pieces to be S31803 grade stainless steel, in accordance with NZS 4673:2001.
- 7. Refer to warranty & maintenance pages for periodic inspection, cleaning & maintenance requirements.

IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

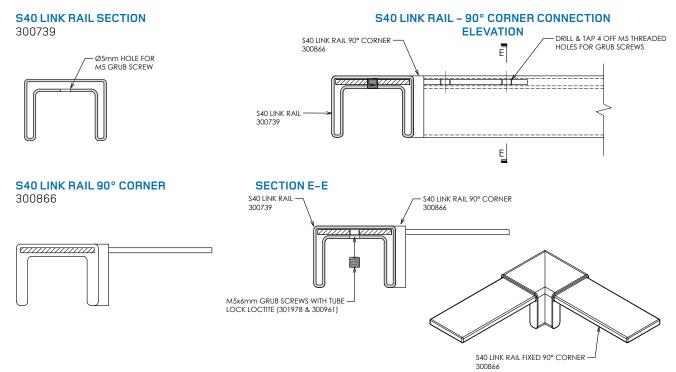


S40 Link Rail

S40-02 **S40 RAIL - SPLICE CONNECTION DETAIL** All fixings to be stainless steel **S40 LINK RAIL SECTION S40 LINK RAIL - SPLICE CONNECTION ELEVATION** 300739 TAP 4 OFF M5 THREADED S40 LINK RAIL Б HOLE FOR GRUB SCREWS 300739 Ø5mm HOLE FOR M5 GRUB SCREW ╺┖┥┛╾┛┽╢╾╸ _____ _____ ₽ **\$40 LINK RAIL JOINER** S40 LINK RAII 300869 300739 **S40 LINK RAIL INLINE JOINER** SECTION D-D S40 LINK RAIL 300739 300869 S40 LINK RAIL 300739 AP HOLE FOR S40 LINK RAIL JOINER M5 GRUB SCREW S40 LINK RAIL JOINER 300869 300869 d 4 OFF M5x6 GRUB SCREWS WITH TUBE LOCK LOCTITE (301978 & 300961) M5x6mm GRUB SCREWS WITH TUBE LOCK LOCTITE (301978 & 300961) **\$40 LINK RAIL** 300739

S40-03 S40 RAIL - 90° CORNER CONNECTION DETAIL

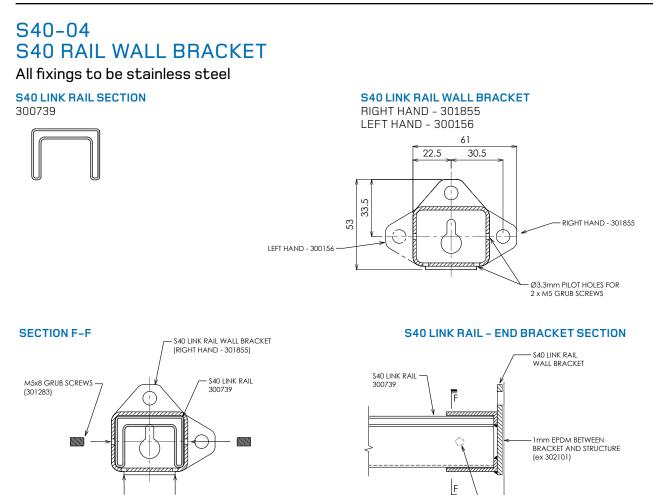
All fixings to be stainless steel



IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



S40 Link Rail



— M5x8 GRUB SCREWS (301283)

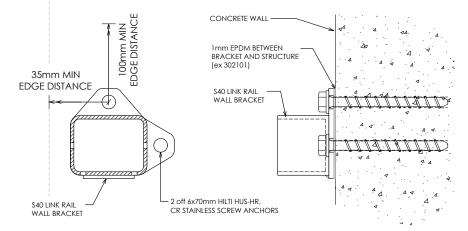
S40-05 S40 RAIL - END BRACKET CONCRETE WALL ATTACHMENT All fixings to be stainless steel

ALTERNATIVE GRUB

SCREW LOCATIONS

NOTES:

- Concrete wall is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Concrete wall to be minimum 140mm thick.
- 3. Concrete wall must be reinforced δ is to be designed δ detailed in accordance with NZS3101.
- 4. Minimum concrete strength = 20MPa.



IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

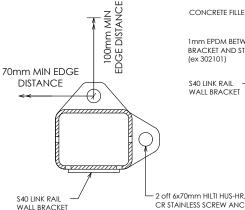


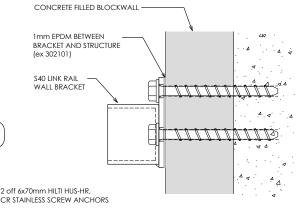
S40 Link Rail

S40-06 S40 RAIL - END BRACKET BLOCKWALL ATTACHMENT All fixings to be stainless steel

NOTES:

- Blockwall is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Minimum blockwall thickness = 140mm.
- Blockwall must be corefilled / reinforced θ is to be designed θ detailed in accordance with NZS4230 or NZS4229.
- 4. Minimum corefill concrete strength = 17.5MPa.





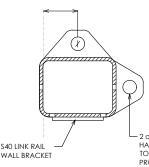
S40-07 S40 RAIL – END BRACKET WEATHERBOARD ATTACHMENT

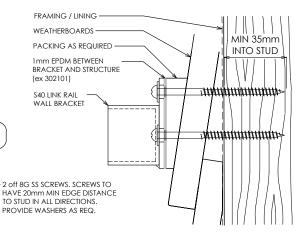
All fixings to be stainless steel

NOTES:

- Timber stud wall is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Minimum stud size = 90x45.
- 3. Minimum timber grade = SG8.
- Timber stud wall to be designed θ detailed in accordance with nzs3603 or NZS3604.

20mm MIN EDGE DISTANCE



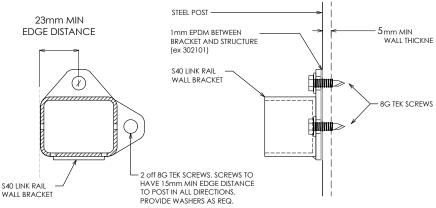


S40-08 S40 RAIL - END BRACKET STEEL POST ATTACHMENT

All fixings to be stainless steel

NOTES:

- 1. Steel post is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN- inwards, outwards or down.
- 2. Building designer to ensure durability requirements of connection are met.
- 3. Minimum steel post wall thickness = 5mm.
- 4. Minimum steel grade = 300MPa.



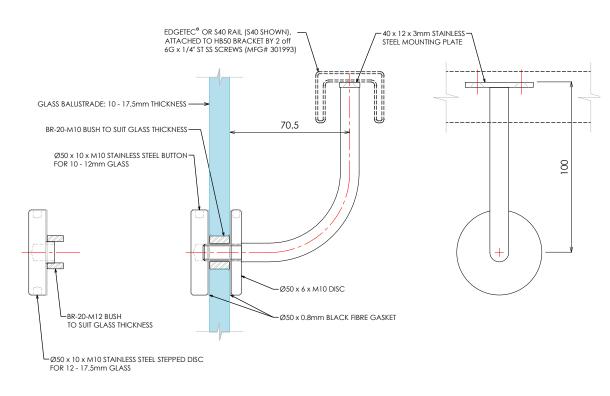
IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



HB50 Rail Brackets

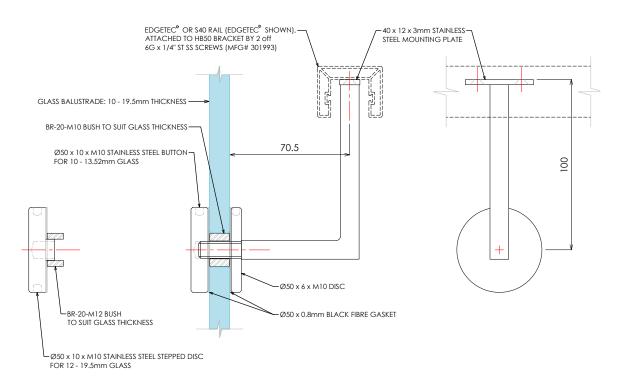
HB50-R-90 HANDRAIL BRACKET

All fixings to be stainless steel



HB50-S-90 HANDRAIL BRACKET

All fixings to be stainless steel

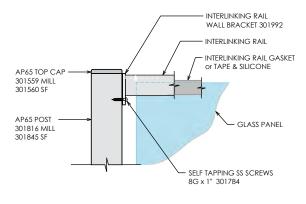


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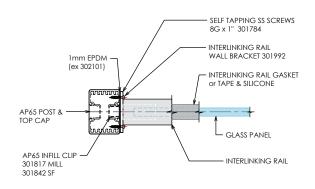
For attaching EDGETEC[®] 220 S25 & S40 (on glass) to a Semi Frameless AP65 Post Interlinking Top Rail (where wall fixing not suitable)

AP65 Structural Post & Edgetec[®] 220 Rail Side Elevation



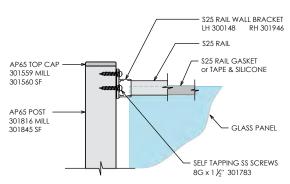


AP65 Structural Post & Edgetec® 220 Rail Plan

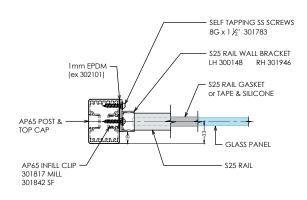


AP65 Structural Post & Edgetec^o Rail Plan

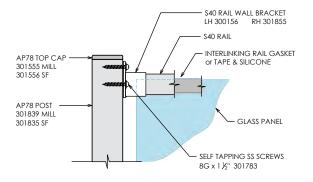
AP65 Structural Post & S25 Rail Side Elevation



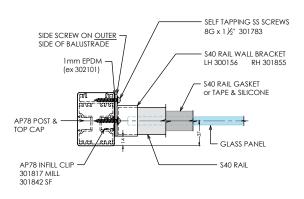
AP65 Structural Post & S25 Rail Plan



AP78 Structural Post & S40 Rail Side Elevation



AP78 Structural Post & S40 Rail Plan

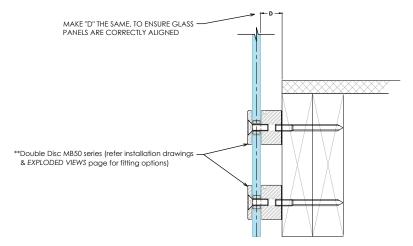


IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

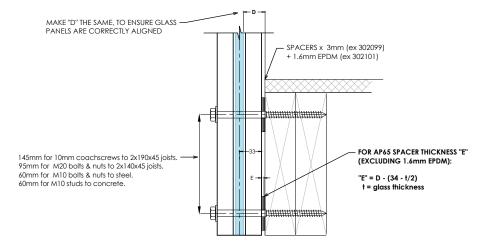


For attaching EDGETEC[®] 220 S25 & S40 (on glass) to a Semi Frameless AP65 Post Interlinking Top Rail (where wall fixing not suitable)

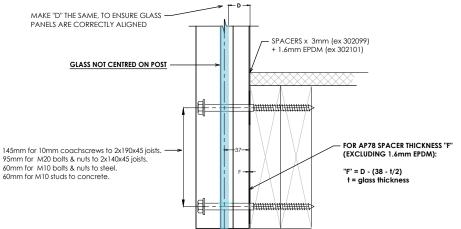
DoubleDisc MB50 Balustrade System



AP65 Semi Frameless Post Extrusion Side Fix Post as an end Post for Edgetec® 220 & S25 Rails



AP78 Semi Frameless Post Extrusion Side Fix Post as an end Post for S40 Rail





1

50MM DOUBLEDISC MB50 BALUSTRADE SYSTEM

Installation / Fitting Instructions

SIDE FIX (MB50) – Heavy Weight Anchor



Product	Installation/Fitting Instructions
Structure Fastening Installation Typical Layout of MB50 – Double Disc	• Verify the deck capacity can withstand the loads required for installation prior to fixing balustrade.
Anchors.	• Using laser level or string line, cast level lines horizontally and vertically to find the centre points of the fastenings required for the building structure as detailed in the PS1.
•	– Minimum edge distance from top of structure to centre line of fixing is 50mm.
	 Fixing layout centres are calculated as: 200mm in from glass edges; Equal spacing's between corner fixings to match PS1 design tables.
	– Height distances between rows are calculated as: 75mm for Residential purposes; 100mm for Commercial purposes.
Backing Disc Installation	 Install fastenings as per the given PS1 for structure type.
Structural fastening into backing Disc Tolerance.	• Fix MB50 backing disc to the fastening, tightening to 40Nm (If using the square cover kit option insert this as required).
-	– Ensure the backing discs are all on a level plane. If the building structure is not level:
	 For MB50 Heavy Weight Anchor – add fibre gaskets (3 gaskets max.) or additional custom disc to a maximum of 100mm.
• • • •	– For MB50 Adjustable Heavy Weight Anchor – adjust the backing disc within its designed tolerance of 10mm.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.



Installation / Fitting Instructions

OTE: when ordering glass ensure the hole diameters are 26mm. heck that the hole locations in the glass panels align with the backing disc astening locations. MB50 Adjustable Heavy Weight Anchor comes with preformed 15mm diameter bush. Tolerance is taken up in the 20mm diameter glass hole. MB50 Heavy Weight Anchor M10 bushes should be changed to BE20-M10 (eccentric) or BS20-M10 (slotted) bushes to allow for 2.0mm adjustment horizontally if required. stall glass panels. For MB50 Heavy Weight Anchor – use black fibre gasket to backing disc surface, suitable bush for tolerance (thickness to suit the glass t), black fibre gasket to outer disc and M10 fastening (length to suit the glass t). – M10 fastening must not clash with building structure fastening inside the backing disc. For MB50 Adjustable Heavy Weight Anchor – use gaskets and M10 fastening supplied with the anchor. the MB50 front disc through the glass panel to the backing disc, tightening to Mn (If using the square cover kit option insert this as required).
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supplied with the anchor. the MB50 front disc through the glass panel to the backing disc, tightening to
heck Glass panel gaps, levels and alignments of frit or similar pattern details. lign with setting blocks and/ or spacers to suit.
check MB50 Double Disc anchors have been torqued to 40Nm.
ce everything is correctly in place and the job is complete, the glass and disc ed to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy cer on the MB50 disc. We also recommend a soft sponge or cloth, again to id any risk of scratching. For full care and maintenance guidelines please refer our comprehensive guide page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.



75mm SingleDisc MB75 System (Side Fix)

The SingleDisc MB75 was born from testing and modelling balustrade fixings to determine the optimum economical fitting for clamp fixing balustrades. The outer disc was profiled to give an attractive appearance and the single fixing point means it can be located on the edge of narrow concrete slabs or steel profiles.

- REDUCED VISUAL IMPACT A SingleDisc point fix Anchor produces an industrial Frameless Balustrade aesthetic with minimal visual impact.
- ▶ ENGINEERED solid 316 Marine Grade Stainless Steel anchor fixing.





Key Features

- The SingleDisc MB75 Balustrade System is side fixed for (face) mounted applications to steel ϑ concrete structure (not suitable for timber).
- Range of options from a contemporary square edge look to a traditional round disc option.
- SingleDisc MB75 is 75mm in diameter.
- Inner spacer is 30mm thick and the outer plate 10mm thick.

Material Finish

- Made from 316 grade stainless steel.
- Available in machined, satin or polished finish.
- Powdercoated upon request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranty from 10 to 30 years.
- All fixings must be Stainless Steel.

Occupancy Type

- Suitable for occupancy types A, B, E and C3 (subject to glass & fixing type).
- Occupancy types as per AS/NZ 1170.1.2002.

Windzone

- Exceeds the wind loading for all Wind Zones up to and including Very High Wind Zone as set out in NZS 3604:2011.
- Max design Wind pressure subject to glass type and fixing method.

SAFELITE[®] EVA Toughened Laminated Safety Glass

Performance Glass, as follows:

- ▶ TEMPAFLOAT® 12mm & 15mm nominal thickness, monolithic toughened safety glass (TSG) with interlinking rail.
- SAFELITE® EVA 15.2mm & 17.2mm nominal thickness, toughened laminated safety glass (TLSG) with stiffener brackets or interlinking rail.
- ▶ SAFELITE® STF (Sentry®) 13.52mm & 17.52mm nominal thickness toughened laminated safety glass (TLSG) with rigid interlayer. Stiffener brackets or interlinking rail not required (provided minimum panel length requirements are satisfied).

Interlinking Hand Rail

All monolithic toughened frameless glass balustrades must have an Interlinking Rail to conform to NZS 4223.3.2016, including the latest amendment of NZBC B1.

Compliance

Complies with AS/NZS 1170:2002, NZS 4223.3.2016, NZ Building Code B1, F2, F4 and F9.

Scope of Use

- ▶ The 30mm long body sets the 12mm/15mm toughened glass panels out from the deck to assist with water draining and cleaning
- Single fixing point means the disc system can be located on the edge of narrow concrete slabs or steel substrates.
- Where required an interlinking top rail finishes off the system, producing a low profile modern look.

Support Inquiries

1.2 EVA

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Oute Thicknes
15.2	8	1.2 EVA	

Interlinking rail or stiffener brackets are required when specifying SAFELITE® EVA Toughened Laminated Safety Glass (minimum panel widths apply)

SAFELITE® STF (Sentry®) Toughened Laminated Safety Glass with rigid interlayer

8

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Outer Layer glass Thickness (Nominal mm)	
13.52	6	1.52 Sentry®	6	
17.52	8	1.52 Sentry®	8	

An interlinking rail is not required when specifying SAFELITE® STF (Sentry®) interlayer. (minimum panel widths apply).

Note: Inner laver refers to the balcony side

17.2



r Layer glass ss (Nominal mm)

6

BALUSTRADE SYSTEM COMPONENTS

Individual Parts – 75mm SingleDisc MB75

(Domestic and Commercial Applications)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MB75 SQUARE EDGE HEAD HEAVYWEIGHT ANCHOR	300027	75mm dia. 30mm standoff GLASS THICKNESS: 12-17.52mm	SS ON REQUEST: POWDERCOAT PSS	316 STAINLESS STEEL	ANCHOR DISC	BALUSTRADE SYSTEM (FACE FIX GLASS TO WALL)	
MB75 SQUARE COVER KIT	300026	Front Cover 75 x 75 x 12mm Body 75 x 75 x 30mm	SS	316 STAINLESS STEEL	COVERTS ROUND FIXING TO SQUARE	BALUSTRADE COMPONENT	Internal & External
	300965	Front Cover 75 x 75 x 12mm Body 75 x 75 x 30mm	PSS		SUITS COMPONENT 300027		<u>]</u> الله ال
			ON REQUEST: POWDERCOAT				

BALUSTRADE SYSTEM COMPONENTS



Balustrade Stiffener Brackets (For Aligning and Stiffening Panels)

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Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
90 DEGREE STIFFENER BRACKET (GLASS TO WALL)	300153	65x55x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
	300154	65x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				ျ ို ကြူ
90 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300151	75x50x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
	300152	88x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				မ္လာ ရက
180 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300149	70x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
26	300150	103x25mm GLASS THICKNESS: 17.5-21.5mm	SS				မ္လာဆို

NOTE: All brackets are supplied with a selection of gaskets to suit glass thickness.



BALUSTRADE FIXING INDIVIDUAL COMPONENTS

Fixings: Rods, Anchors, Screws, Washers, Nuts

To suit Concrete and Steel Substrates (Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MB75 / MB100	301521	M12x60mm	SS	STAINLESS	THREADED	FIXING	Internal &
STAINLESS STEEL RODS	301518	M12-120mm	SS	STEEL	ROD	COMPONENT	External
	301519	M12x150mm	SS				
							ال ال
MB75 / MB100	301028	M12 Hex Nut	SS	STAINLESS	HEX / DOME	FIXING	Internal &
NUT (HEX / DOME)	301027	M12 Dome Nut	SS	STEEL	NUT	COMPONENT	External
							_ ∰ ¶P
GASKETS (ROUND)	300600	75mm dia. x 0.8mm	OPAQUE	BLACK FIBRE AND OPAQUE	GASKET *Opaque is	FIXING COMPONENT	Internal & External
	300592	75mm dia. x 0.8mm	BLACK FIBRE	(OPTION)	for internal applications, Black Fibre is		
•					for Internal and External applications.		ျင ကျ
TAPPERED SHIM	300617	75mm diameter	BLACK	NYLON	TAPERED SHIM	FIXING	Internal &
1-2MM					1-2mm	COMPONENT	External ဆြ ဆို
TAPPERED SHIM 1-3MM	300618	75mm diameter	BLACK	NYLON	TAPERED SHIM	FIXING	Internal &
					1-3mm	COMPONENT	External
	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK	BALUSTRADE	Internal &
					ADHESIVE	LINK RAIL COMPONENT	External





S25 Link Rail



- 25 x 21mm 2205 Stainless Steel.
- Suitable for 10mm or 12mm Glass Thickness.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel finish standard, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL	300738	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
P		OVERALL SIZE: 25 x 21mm					*
S25 LINK RAIL	300118	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External
S25 LINK RAIL	301854	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External



S25 Link Rail

www.metroglass.co.nz

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL VERTICAL ADJUSTABLE JOINER	300863	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300862	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL FIXED 90 DEGREE CORNER	300861	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL INLINE JOINER	300864	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	INLINE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 END CAP	300512	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	END CAP	BALUSTRADE LINK RAIL COMPONENT	Internal & External
LINK RAIL LOCTITE 243	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL RUBBER GASKET	302091	Suits S25 Rail PER METRE LENGTH GLASS THICKNESS: 12mm	BLACK	RUBBER	RUBBER GASKET FOR S25 LINK RAIL	BALUSTRADE LINK RAIL COMPONENT	Internal Ə External
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS STEEL	GRUB SCREW	BALUSTRADE LINK RAIL FIXING	Internal Ə External

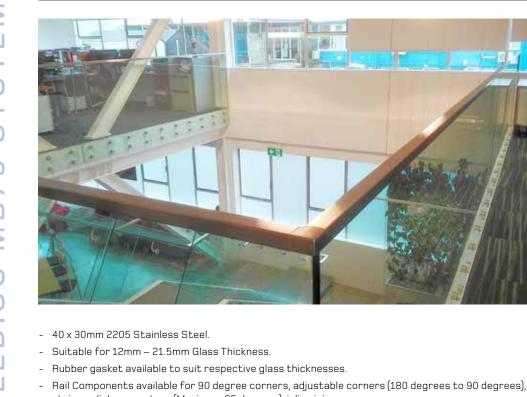
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BALUSTRADE RAIL SYSTEM S40 Link Rail





- stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel standard finish, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	300739	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 12 – 21.5mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
		OVERALL SIZE: 40 x 30mm					
S40 LINK RAIL	300156	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External
S40 LINK RAIL	301855	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External



S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL VERTICAL ADJUSTABLE JOINER	300868	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE VERTICAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal 0 External
S40 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300867	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S40 LINK RAIL FIXED 90 DEGREE CORNER	300866	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S40 LINK RAIL INLINE JOINER	300869	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	INLINE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S40 END CAP	300513	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	END CAP	BALUSTRADE LINK RAIL COMPONENT	Internal & External
LINK RAIL LOCTITE 243	300961	Suits S40 Rail	ADHESIVE	50MM BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S40 LINK RAIL RUBBER GASKET	302092	Suits S40 Rail PER METRE LENGTH GLASS THICKNESS: 12-13.5mm	BLACK	RUBBER	RUBBER GASKET FOR S40 LINK RAIL	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S40 LINK RAIL RUBBER GASKET	302093	Suits S40 Rail PER METRE LENGTH GLASS THICKNESS: 12-15mm	BLACK	RUBBER	RUBBER GASKET FOR S40 LINK RAIL	BALUSTRADE LINK RAIL FIXING	Internal & External





S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	302094	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
RUBBER GASKET		PER METRE LENGTH			GASKET FOR S40 LINK RAIL	LINK RAIL COMPONENT	External
		GLASS THICKNESS: 13-16mm					<u>[</u>
S40 LINK RAIL	302095	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
RUBBER GASKET		PER METRE LENGTH			GASKET FOR S40 LINK RAIL	LINK RAIL COMPONENT	External
		GLASS THICKNESS: 16-19mm					
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS	GRUB SCREW	BALUSTRADE	Internal &
(STEEL		LINK RAIL FIXING	

BALUSTRADE RAIL SYSTEM Edgetec[®] 220 Link Rail



Aluminium LinkRail 38x30mm – For 12mm and 15mm Glass

- 38 x 30mm Aluminium Link Rail.
- Available in Natural Anodisied Finish 20 microns as standard or Silver Frost powdercoat. Special colours on request (Powdercoating or Anodising).
- Rubber gasket available to suit 12mm or 15mm glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.



Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	300728	5800mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL	300729	5800mm	SILVER FROST			LINK RAIL	External
FULL LENGTH	300727	5800mm	MILL FINISH				
		GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	300725	2900mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL	300726	2900mm	SILVER FROST			LINK RAIL	External
HALF LENGTH	300724	2900mm	MILL FINISH				
		(Half Length) GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	300593	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 12mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT	
EDGETEC [®] 220	300594	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 15mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT *For a 5.8m Link Rail x2 rubber gaskets lengths are required	External
EDGETEC [®] 220	300847	80x22.8x5mm	MILL	ALUM 6063	180 DEGREE	BALUSTRADE	Internal &
					STRAIGHT JOINER	LINK RAIL COMPONENT	External
EDGETEC® 220	300848	50x50x5mm	MILL	ALUM 6063	90 DEGREE	BALUSTRADE	Internal &
LINK RAIL 90 DEGREE JOINER					CORNER JOINER	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300493	38.4 x 30.4mm	ANOD – Natural	ALUM 6063	END CAP	BALUSTRADE	Internal &
END CAP	300494	38.4 x 30.4mm	SILVER FROST			LINK RAIL COMPONENT	External
6	300492	38.4 x 30.4mm	MILL			CONFUNENT	
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT				###
EDGETEC [®] 220 LINK RAIL FIXED 90 DEGREE	301985	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External
CORNER	301986	Suits Edgetec® 220 Rail	MILL			CONFONENT	
A		(Component)	ON REQUEST: POWDERCOAT				





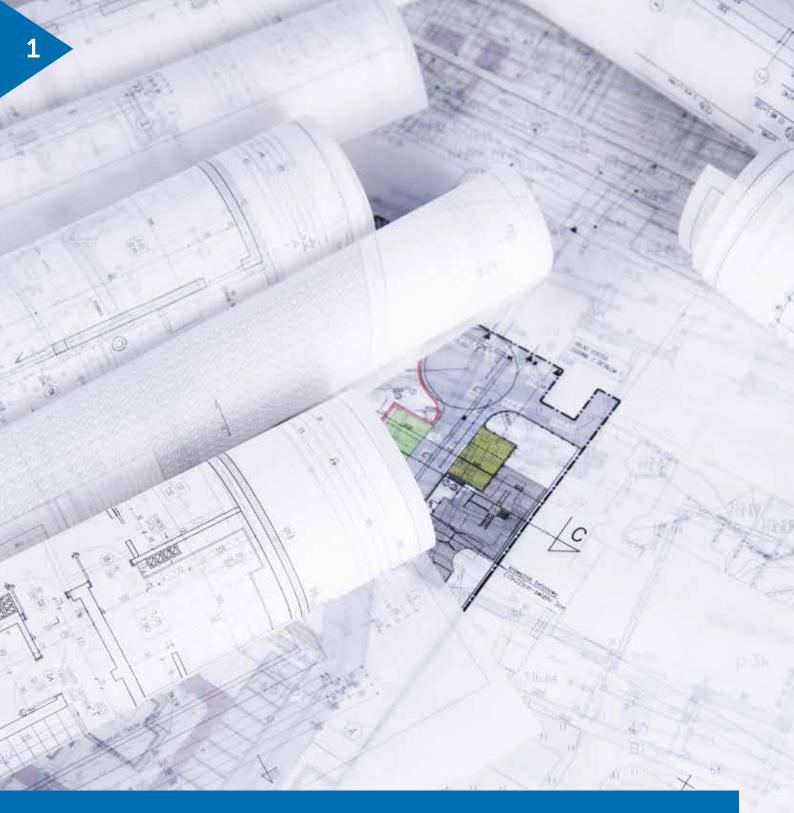


Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	301987	Suits Edgetec®	SILVER FROST	ALUM 6063	ADJUSTABLE	BALUSTRADE	Internal &
LINK RAIL HORIZONTAL ADJUSTABLE	301988	220 Rail Suits Edgetec® 220 Rail	MILL		HORIZONTAL JOINER	LINK RAIL COMPONENT	External
JOINER		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220 LINK RAIL	301989	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	ADJUSTABLE VERTICAL	BALUSTRADE LINK RAIL	Internal & External
VERTICAL ADJUSTABLE JOINER	301990	Suits Edgetec® 220 Rail	MILL		JOINER	COMPONENT	
i.		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220	301003	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)	301004	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC [®] 220	301005	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)	301006	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC [®] 220	301002	100 x 65mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT	301149	100 x 65mm	MILL		BRACKET	LINK RAIL COMPONENT	External
-		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC [®] 220	301991	60 x 46mm	SILVER FROST	ALUM 6063	POST END	BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT*	301992	60 x 46mm	MILL	_	MOUNT FOR AP65	LINK RAIL COMPONENT	External
*Suits AP65 Series Aluminium Post		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
SCREW	301993	6G x 1/4" Sq	SS	304 STAINLESS	SCREW	PAN HEAD	Internal &
() () ()		GLASS THICKNESS: 12mm, 15mm		STEEL		SCREW SUITS COMPONENT 300847 301985 301986 301003 301004 301005 301005 301006 301002 301149 301991 301992	
SILICONE – STRUCTURAL GLAZING	300011	V60	ADHESIVE	CARTRIDGE	SILICONE	FIXING COMPONENT	Internal & External







Design Tables

Design tables for this balustrade system are currently in development, and will be added once complete.

For information regarding glass types and typical fixing spacings for a given design wind pressure, please contact Metro Technical team - (09) 927 3000 technical@metroglass.co.nz

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Glass thickness key:

Glass	Inner layer ³	Interlayer thickness	Outer layer	Panel si:	ze requirements
Thickness t (mm)	glass thickness (mm)	(mm) and type	glass thickness (mm)	Minimum panel width (mm)	Maximum panel width (mm)
12	-	-	-	1000	1700/1900 (see below)
13.52	6	1.52 SAFELITE® STF (Sentry®)	6	1700	Refer manufacturing limits
15.2	8	1.2 SAFELITE® EVA	6	1000	1700/1900 (see below)
15	-	-	-	1000	1700/1900 (see below)
17.52	8	1.52 SAFELITE® STF (Sentry®)	8	1100	Refer manufacturing limits
17.2	8	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)
19.2	10	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)
21.52	10	1.52 SAFELITE® STF (Sentry®)	10	1100	Refer manufacturing limits

Note: 3) Inner layer refers to balcony side.

Maximum panel widths for Interlinking Rail/Bracket systems:

Applies where barrier is protecting a fall of 1.0m or more.

Interlinking Rail System	Maximum panel width (mm)	Position
S25 S40 Edgetec®220	1700 1700/1900 1700/1900	on glass only HB50 bracket/on glass HB50 bracket/on glass
MFG SB Bracket on SAFELITE® only	1900	Max 200mm from top of glass

Post failure requirements:

Applies where barrier is protecting a fall of 1.0m or more.

Glass Type	Requirement
TEMPAFLOAT®	Interlinking rail required in all cases
SAFELITE® EVA	Interlinking rail or SB brackets required all cases
SAFELITE® STF (Sentry®)	No interlinking rail required, minimum panel widths apply

NOTES:

- The specifier must ensure the balustrade height above floor level requirements as per the NZ Building Code are complied with.
- Design loads are in accordance with AS/NZS 1170.1:2002 table 3.3 and NZBC B1/VM1 and DBH Guidance on Barrier Design (March 2012). M* & T* denote bending moment (kNm/m width) and tension loads (kN/connection) respectively to be supported by the deck/ pool structure.
- Capacity of all substructure is to be verified by building engineer or checked for accordance with NZS3604 (where applicable) prior to fixing. Refer to fixing detail drawings for further details. All glass is to be toughened safety glass supplied by Metro Performance Glass, in either TEMPAFLOAT® Monolithic, SAFELITE® EVA Laminated or SAFELITE® STF (Sentry®) Laminated variants.
- Glass & interlayer thicknesses shown are nominal thickness. Table is based on glass minimum tolerance as per NZS 4223.1:2008.
- Minimum glass strength 100MPa, all edges polished. Maximum 10mm tolerance allowed to H heights noted in table. Monolithic glass options only applicable for situations where all parts of glazing are within 5000mm of adjacent lower floor/ground below. Pool fences refer to free standing structures where safety from falling is not applicable, design is based on Importance Level 1.



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75MM SINGLEDISC MB75 BALUSTRADE SYSTEM

Installation / Fitting Instructions

SIDE FIX (MB75) Heavy Weight Anchor



Product	Installation/Fitting Instructions
Structure Fastening Installation Typical Layout of SingleDisc MB75 – Anchors.	• Verify the mounting structure can withstand the loads required for installation prior to fixing balustrade.
	• Using laser level or string line, cast level lines horizontally and vertically to find the centre points of the fastenings required for the building structure as detailed in the PS1.
	– Minimum edge distance from top of structure to centre line of fixing is 40mm.
00000	– Fixing layout centres are calculated as: 200mm in from glass edges; Equal spacing's between corner fixings to match PS1 design tables.
Backing Disc Installation	Install fastenings as per the PS1 for structure type.
Structural fastening into backing Disc Tolerance.	• Fix MB75 backing disc to the fastening, tightening to 40Nm (If using the square cover kit option insert this as required)
and the second s	– Ensure the backing discs are all on a level plane. If the building structure is not level:
	– For SingleDisc MB75 Heavy Weight Anchor- add fibre gaskets (3 gaskets max.) or additional custom disc to a maximum of 100mm.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.



75MM SINGLEDISC MB75 BALUSTRADE SYSTEM

Installation / Fitting Instructions

Product	Installation/Fitting Instructions
Glass Installation	• NOTE: when ordering glass ensure the hole diameters are 26mm.
	• Check that the hole locations in the glass panels align with the backing disc locations.
	 SingleDisc MB75 anchor M12 bushes can be changed to M12 slotted bushes to allow for 2.0mm adjustment horizontally if required.
	• Install glass panels.
	 For SingleDisc MB75 Heavy Weight Anchor – use black fibre gasket to backing disc surface, suitable bush for tolerance (thickness to suit the glass t), black fibre gasket to outer disc and M12 fastening (length to suit the glass t).
2	• Fix the SingleDisc MB75 front disc through the glass panel to the backing disc, tightening to 40Nm.
	– If using the square cover kit option insert this as required.
	– M12 fastening must not clash with building structure fastening inside the backing disc.
Final Adjustment	1. Check Glass panel gaps, levels and alignments of frit or similar pattern details.
	Align with setting blocks and/ or spacers to suit.
	2. Check SingleDisc MB75 anchors have been torqued to 40Nm.
Cleaning	Once everything is correctly in place and the job is complete, the glass and disc need to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the SingleDisc MB75. We also recommend a soft sponge or cloth, to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.





100mm SingleDisc MB100 System (Side Fix)

The SingleDisc MB100 was designed to provide solid single point clamping, as an option to double disc or continuous plate systems. The outer and inner discs are simple circular profiles and the single fixing point means it can be located on the edge of narrow concrete slabs or steel profiles.

- SOLID DESIGN The SingleDisc MB100 produces a 'chunky aesthetic' for when a solid strong design statement is required.
- ENGINEERED solid 316 Marine Grade Stainless Steel anchor fixing.



Key Features

- The SingleDisc MB100 Balustrade System is side fixed for (face) mounted applications to steel & concrete structure (not suitable for timber).
- ▶ The SingleDisc MB100 is 100mm in diameter.
- The inner spacer is 30mm thick and the outer plate 10mm thick.
- ▶ The fitting uses M12 fixings.

Material Finish

- Made from 316 grade stainless steel.
- Available in machined, satin or polished finish.
- Powdercoated upon request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.
- All fixings must be Stainless Steel.

Occupancy Type

- Suitable for occupancy types A, B, E and C3 (subject to glass & fixing type).
- Occupancy types as per AS/NZ 1170.1.2002

Windzone

- Exceeds the wind loading for all Wind Zones up to and including Very High Wind Zone as set out in NZS 3604:2011
- Max design Wind pressure subject to glass type and fixing method.

The system is glazed with Metro Performance Glass, as follows:

► TEMPAFLOAT® 12mm ⊕ 15mm nominal thickness, monolithic toughened safety glass (TSG) with interlinking rail.

SAFELITE® EVA 15.2mm 8 17.2mm nominal thickness, toughened laminated safety glass (TLSG) with stiffener brackets or interlinking rail.

SAFELITE® STF (Sentry®) 13.52mm & 17.52mm nominal thickness toughened laminated safety glass (TLSG) with rigid interlayer. Stiffener brackets or interlinking rail not required (provided minimum panel length requirements are satisfied).

Interlinking Hand Rail

All monolithic toughened frameless glass balustrades must have an Interlinking Rail to conform to NZS 4223.3.2016, including the latest amendment of NZBC B1.

Compliance

Complies with AS/NZS 1170:2002, NZS 4223.3.2016, NZ Building Code B1, F2, F4 and F9.

Scope of Use

- The 30mm long body sets the glass panels out from the deck to assist with water draining and cleaning.
- Single fixing point means the disc system can be located on the edge of narrow concrete slabs or steel profiles.
- Where required an interlinking top rail finishes off the system, producing a low profile modern look.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

SAFELITE® EVA Toughened Laminated Safety Glass

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Outer Layer glass Thickness (Nominal mm)
15.2	8	1.2 EVA	6
17.2	8	1.2 EVA	8

Interlinking rail or stiffener brackets are required when specifying SAFELITE® EVA Toughened Laminated Safety Glass (minimum panel widths apply)

SAFELITE® STF (Sentry®) Toughened Laminated Safety Glass with rigid interlayer

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Outer Layer glass Thickness (Nominal mm)
13.52	6	1.52 Sentry®	6
17.52	8	1.52 Sentry®	8

An interlinking rail is not required when specifying SAFELITE® STF (Sentry®) interlayer. (minimum panel widths apply).

Note: Inner layer refers to the balcony side



BALUSTRADE SYSTEM COMPONENTS

Individual Parts – 100mm SingleDisc MB100



(Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MB100 SQUARE	300439	100mm dia.	SS	316 STAINLESS	ANCHOR DISC	BALUSTRADE	Internal &
EDGE HEAD HEAVYWEIGHT ANCHOR		30mm standoff GLASS THICKNESS: 12-17.52mm	ON REQUEST: PSS or POWDERCOAT	STEEL *MB100 is made to order		SYSTEM (FACE FIX GLASS TO WALL)	

BALUSTRADE SYSTEM COMPONENTS



Balustrade Stiffener Brackets (For Aligning and Stiffening Panels)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area		
90 DEGREE STIFFENER BRACKET (GLASS TO WALL)	300153	65x55x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STIFFENER STEEL BRACKET	FIXING COMPONENT	Internal 8 External			
-	300154	65x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				ent €		
90 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300151	75x50x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL		STIFFENER BRACKET	FIXING COMPONENT		Internal & External
	300152	88x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				ျ ို ကြို		
180 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300149	70x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External		
26	300150	103x25mm GLASS THICKNESS: 17.5-21.5mm	SS				Jb ∰		

NOTE: All brackets are supplied with a selection of gaskets to suit glass thickness.



BALUSTRADE FIXING INDIVIDUAL COMPONENTS

Fixings: Rods, Anchors, Screws, Washers, Nuts

To suit Concrete and Steel Substrates (Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MB75 / MB100 STAINLESS	301521	M12x60mm	SS	STAINLESS	THREADED	FIXING	Internal &
STEEL RODS	301518	M12-120mm	SS	STEEL	ROD	COMPONENT	External
	301519	M12x150mm	SS				 ¶∰[
MB75 / MB100	301028	M12 Hex Nut	SS	STAINLESS	HEX / DOME	FIXING	Internal &
NUT (HEX / DOME)	301027	M12 Dome Nut	SS	STEEL	NUT	COMPONENT	External
·							 €
GASKETS (ROUND)	300599	75mm dia. x 0.8mm	OPAQUE	BLACK FIBRE AND OPAQUE	GASKET	FIXING COMPONENT	Internal & External
	300579	75mm dia. x 0.8mm	BLACK FIBRE	(OPTION)	*Opaque is for internal applications,		
0					Black Fibre is for Internal and External applications.		∰ ¶P
LINK RAIL LOCTITE 243	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK	BALUSTRADE	Internal &
					ADHESIVE	LINK RAIL COMPONENT	External





S25 Link Rail



- 25 x 21mm 2205 Stainless Steel.
- Suitable for 10mm or 12mm Glass Thickness.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel finish standard, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL	300738	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
P		OVERALL SIZE: 25 x 21mm)
S25 LINK RAIL	300118	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External
S25 LINK RAIL	301854	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External



S25 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL VERTICAL ADJUSTABLE JOINER	300863	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal 0 External
S25 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300862	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal 0 External
S25 LINK RAIL FIXED 90 DEGREE CORNER	300861	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S25 LINK RAIL INLINE JOINER	300864	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	INLINE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S25 END CAP	300512	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	END CAP	BALUSTRADE LINK RAIL COMPONENT	Internal & External
LINK RAIL LOCTITE 243	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL RUBBER GASKET	302091	Suits S25 Rail PER METRE LENGTH GLASS THICKNESS: 12mm	BLACK	RUBBER	RUBBER GASKET FOR S25 LINK RAIL	BALUSTRADE LINK RAIL COMPONENT	Internal & External
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS STEEL	GRUB SCREW	BALUSTRADE LINK RAIL FIXING	Internal Ə External External

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BALUSTRADE RAIL SYSTEM S40 Link Rail



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- 40 x 30mm 2205 Stainless Steel.
- Suitable for 12mm 21.5mm Glass Thickness.
- Rubber gasket available to suit respective glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel standard finish, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	300739	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 12 – 21.5mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
P		OVERALL SIZE: 40 x 30mm					
S40 LINK RAIL WALL BRACKET	300156	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
(LEFT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External
S40 LINK RAIL	301855	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External



S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL VERTICAL ADJUSTABLE JOINER	300868	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE VERTICAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
	300867	Suits S40 Rail	SS				
S40 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300867		ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal Ə External
S40 LINK RAIL FIXED 90 DEGREE	300866	Suits S40 Rail	SS	2205 STAINLESS STEEL	90 DEGREE CORNER	BALUSTRADE LINK RAIL	Internal & External
CORNER			ON REQUEST: POWDERCOAT	SIEEL	CONNECTOR	COMPONENT	
S40 LINK RAIL	300869	Suits S40 Rail	SS	2205 STAINLESS	INLINE JOINER	BALUSTRADE	Internal &
NEINE SOINER			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	
S40 END CAP	300513	Suits S40 Rail	SS	2205 STAINLESS	END CAP	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	
LINK RAIL LOCTITE 243	300961	Suits S40 Rail	ADHESIVE	50MM BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL COMPONENT	Internal Θ External
S40 LINK RAIL	302092	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
RUBBER GASKET		PER METRE LENGTH GLASS THICKNESS: 12-13.5mm			GASKET FOR S40 LINK RAIL	LINK RAIL COMPONENT	External
S40 LINK RAIL RUBBER GASKET	302093	Suits S40 Rail PER METRE LENGTH GLASS THICKNESS: 12-15mm	BLACK	RUBBER	RUBBER GASKET FOR S40 LINK RAIL	BALUSTRADE LINK RAIL FIXING	Internal & External

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S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	302094	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
RUBBER GASKET		PER METRE LENGTH			GASKET FOR S40 LINK RAIL	LINK RAIL COMPONENT	External
		GLASS THICKNESS: 13-16mm					
S40 LINK RAIL	302095	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE LINK RAIL COMPONENT	Internal &
RUBBER GASKET		PER METRE LENGTH			GASKET FOR S40 LINK RAIL		External
		GLASS THICKNESS: 16-19mm					
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS	GRUB SCREW	BALUSTRADE	Internal &
(Control)				STEEL		LINK RAIL FIXING	External

BALUSTRADE RAIL SYSTEM Edgetec[®] 220 Link Rail



Aluminium LinkRail 38x30mm – For 12mm and 15mm Glass

- 38 x 30mm Aluminium Link Rail.
- Available in Natural Anodisied Finish 20 microns as standard or Silver Frost powdercoat. Special colours on request (Powdercoating or Anodising).
- Rubber gasket available to suit 12mm or 15mm glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.





Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC® 220	300728	5800mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL	300729	5800mm	SILVER FROST			LINK RAIL	External
FULL LENGTH	300727	5800mm	MILL FINISH				
		GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	300725	2900mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL	300726	2900mm	SILVER FROST			LINK RAIL	External
HALF LENGTH	300724	2900mm	MILL FINISH				
		(Half Length) GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	300593	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 12mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300594	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 15mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT *For a 5.8m Link Rail x2 rubber gaskets lengths are required	External
EDGETEC [®] 220	300847	80x22.8x5mm	MILL	ALUM 6063	180 DEGREE	BALUSTRADE	Internal &
					STRAIGHT JOINER	LINK RAIL COMPONENT	External
EDGETEC® 220	300848	50x50x5mm	MILL	ALUM 6063	90 DEGREE	BALUSTRADE	Internal &
LINK RAIL 90 DEGREE JOINER					CORNER JOINER	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300493	38.4 x 30.4mm	ANOD – Natural	ALUM 6063	END CAP	BALUSTRADE	Internal &
END CAP	300494	38.4 x 30.4mm	SILVER FROST			LINK RAIL COMPONENT	External
	300492	38.4 x 30.4mm	MILL				
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220 LINK RAIL FIXED 90 DEGREE	301985	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External
CORNER	301986	Suits Edgetec® 220 Rail	MILL			CONFUNENT	
		(Component)	ON REQUEST: POWDERCOAT				





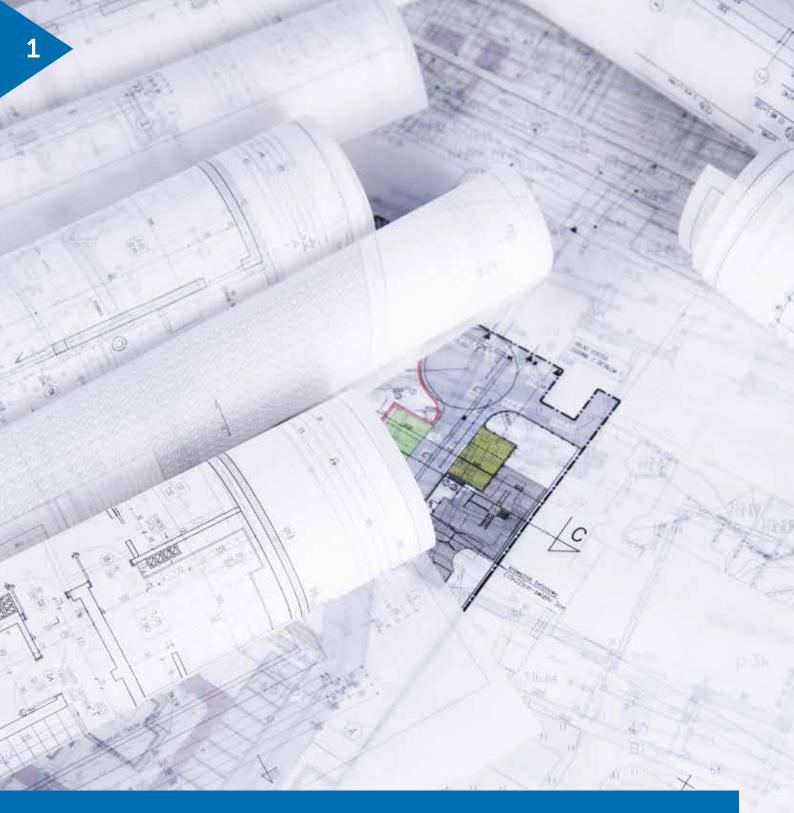


Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	301987	Suits Edgetec®	SILVER FROST	ALUM 6063	ADJUSTABLE	BALUSTRADE	Internal &
LINK RAIL HORIZONTAL ADJUSTABLE	301988	220 Rail Suits Edgetec® 220 Rail	MILL		HORIZONTAL JOINER	LINK RAIL COMPONENT	External
JOINER		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220 LINK RAIL	301989	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	ADJUSTABLE VERTICAL	BALUSTRADE LINK RAIL	Internal & External
VERTICAL ADJUSTABLE JOINER	301990	Suits Edgetec® 220 Rail	MILL		JOINER	COMPONENT	
i		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220	301003	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)	301004	120 x 45mm	MILL	_	BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC [®] 220	301005	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)	301006	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	L
EDGETEC [®] 220	301002	100 x 65mm	SILVER FROST	ALUM 6063 WALL BRACKET		BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT	301149	100 x 65mm	MILL		LINK RAIL COMPONENT	External	
-		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC® 220	301991	60 x 46mm	SILVER FROST	ALUM 6063	POST END	BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT*	301992	60 x 46mm	MILL	N	MOUNT FOR AP65	LINK RAIL COMPONENT	External
*Suits AP65 Series Aluminium Post		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
SCREW	301993	6G x 1/4" Sq	SS	304 STAINLESS	SCREW	PAN HEAD	Internal &
() () () () () () () () () () () () () (GLASS THICKNESS: 12mm, 15mm		STEEL		SCREW SUITS COMPONENT 300847 301985 301986 301003 301004 301005 301005 301006 301002 301149 301991 301992	
SILICONE – STRUCTURAL GLAZING	300011	V60	ADHESIVE	CARTRIDGE	SILICONE	FIXING COMPONENT	Internal 8 External







Design Tables

Design tables for this balustrade system are currently in development, and will be added once complete.

For information regarding glass types and typical fixing spacings for a given design wind pressure, please contact Metro Technical team - (09) 927 3000 technical@metroglass.co.nz

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Glass thickness key:

Glass	Inner layer ³	Interlayer thickness	Outer layer	Panel si:	ze requirements
Thickness t (mm)	glass thickness (mm)	(mm) and type	glass thickness (mm)	Minimum panel width (mm)	Maximum panel width (mm)
12	-	-	-	1000	1700/1900 (see below)
13.52	6	1.52 SAFELITE® STF (Sentry)	6	1700	Refer manufacturing limits
15.2	8	1.2 SAFELITE® EVA	6	1000	1700/1900 (see below)
15	-	-	-	1000	1700/1900 (see below)
17.52	8	1.52 SAFELITE® STF (Sentry)	8	1100	Refer manufacturing limits
17.2	8	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)
19.2	10	1.2 SAFELITE® EVA	8	1000	1700/1900 (see below)
21.52	10	1.52 SAFELITE® STF (Sentry)	10	1100	Refer manufacturing limits

Note: 3) Inner layer refers to balcony side.

Maximum panel widths for Interlinking Rail/Bracket systems:

Applies where barrier is protecting a fall of 1.0m or more.

Interlinking Rail System	Maximum panel width (mm)	Position
S25 S40 Edgetec®220	1700 1700/1900 1700/1900	on glass only HB50 bracket/on glass HB50 bracket/on glass
MFG SB Bracket on SAFELITE® only	1900	Max 200mm from top of glass

Post failure requirements:

Applies where barrier is protecting a fall of 1.0m or more.

Glass Type	Requirement
TEMPAFLOAT®	Interlinking rail required in all cases
SAFELITE® EVA	Interlinking rail or SB brackets required all cases
SAFELITE® STF (Sentry®)	No interlinking rail required, minimum panel widths apply

NOTES:

- The specifier must ensure the balustrade height above floor level requirements as per the NZ Building Code are complied with.
- Design loads are in accordance with AS/NZS 1170.1:2002 table 3.3 and NZBC B1/VM1 and DBH Guidance on Barrier Design (March 2012). M* & T* denote bending moment (kNm/m width) and tension loads (kN/connection) respectively to be supported by the deck/ pool structure.
- Capacity of all substructure is to be verified by building engineer or checked for accordance with NZS3604 (where applicable) prior to fixing. Refer to fixing detail drawings for further details. All glass is to be toughened safety glass supplied by Metro Performance Glass, in either TEMPAFLOAT® Monolithic, SAFELITE® EVA Laminated or SAFELITE® STF (Sentry®) Laminated variants.
- Glass & interlayer thicknesses shown are nominal thickness. Table is based on glass minimum tolerance as per NZS 4223.1:2008.
- Minimum glass strength 100MPa, all edges polished. Maximum 10mm tolerance allowed to H heights noted in table. Monolithic glass options only applicable for situations where all parts of glazing are within 5000mm of adjacent lower floor/ground below. Pool fences refer to free standing structures where safety from falling is not applicable, design is based on Importance Level 1.



100MM SINGLEDISC MB100 BALUSTRADE SYSTEM

Installation / Fitting Instructions

SIDE FIX (MB100) – Heavy Weight Anchor



Product	Installation/Fitting Instructions
Structure Fastening Installation Typical Layout of SingleDisc MB100 – Heavy	• Verify the mounting structure can withstand the loads required for installation prior to fixing balustrade.
Weight Anchors.	• Using laser level or string line, cast level lines horizontally and vertically to find the centre points of the fastenings required for the building structure as detailed in the PS1.
	– Minimum edge distance from top of structure to centre line of fixing is 50mm.
000000	– Fixing layout centres are calculated as: 200mm in from glass edges; Equal spacing's between corner fixings to match PS1 design tables.
Backing Disc Installation	• Install fastenings as per the given PS1 for structure type.
Structural fastening into backing Disc Tolerance.	• Fix SingleDisc MB100 backing disc to the fastening, tightening to 40Nm (If using the square cover kit option insert this as required).
	– Ensure the backing discs are all on a level plane. If the building structure is not level:
	– For SingleDisc MB100 Heavy Weight Anchor- add fibre gaskets (3 gaskets max.) or additional custom disc to a maximum of 100mm.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.



100MM SINGLEDISC MB100 BALUSTRADE SYSTEM

Installation / Fitting Instructions

Product	Installation/Fitting Instructions
Glass Installation	• NOTE: when ordering glass ensure the hole diameters are 26mm.
	 Check that the hole locations in the glass panels align with the backing disc locations. SingleDisc MB100 anchor M12 bushes can be changed to M12 slotted bushes to allow for 2.0mm adjustment horizontally if required. Install glass panels. For SingleDisc MB100 Heavy Weight Anchor – use black fibre gasket to backing disc surface, suitable bush for tolerance (thickness to suit the glass t), black fibre gasket to outer disc and M12 fastening (length to suit the glass t). Fix the SingleDisc MB100 front disc through the glass panel to the backing disc, tightening to 40Nm. M12 fastening must not clash with building structure fastening inside the backing disc.
Final Adjustment	 1. Check Glass panel gaps, levels and alignments of frit or similar pattern details. Align with setting blocks and/ or spacers to suit. 2. Check SingleDisc MB100 anchors have been torqued to 40Nm.
Cleaning	Once everything is correctly in place and the job is complete, the glass and disc need to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the SingleDisc MB100 disc. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.





PlateFix PF150 System

The PlateFix PF150 was born from the double disc fixings by joining the discs into a single piece profile base plate with an outer clamping plate for a stronger multipurpose balustrade fixing. This enables the PF150 to be used with single or double fixings and it can be used vertically, horizontally, angled or a combination of the above.

- ► ARCHITECTURALLY STYLED less 'busy' alternative to a double disc.
- ENGINEERED solid 316 Marine Grade Stainless Steel anchor fixing, providing the strength of double fixing with the simplicity of a single plate design.



Key Features

- The PlateFix PF150 Balustrade system is side fixed for (face) mounted applications.
- The PlateFix PF150 is 150mm high and 50mm wide with radius ends.
- > The inner spacer is 20mm thick and the outer plate 6mm thick.

Material Finish

- Made from 316 grade stainless steel.
- Available in satin or polished finish. A special bead blast finish is available.
- Powdercoated upon request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.
- All fixings must be Stainless Steel.

Occupancy Type

- Suitable for occupancy types A, B, E, and C3. (subject to glass & fixing type).
- Occupancy Types as per AS/NZ 1170.1.2002.

Windzone

- Exceeds the wind loading for all Wind Zones up to and including Very High Wind Zone as set out in NZS 3604:2011
- Max design Wind pressure subject to glass type and fixing method.

The system is glazed with Metro Performance Glass, as follows:

- TEMPAFLOAT® 12mm 8 15mm nominal thickness, monolithic toughened safety glass, with an interlinking rail.
- SAFELITE® EVA 15.2mm & 17.2mm nominal thickness, toughened laminated safety glass, with either an interlinking rail or stiffener brackets.
- SAFELITE® STF (Sentry®) 13.52mm & 17.52mm nominal thickness, toughened laminated safety glass with sentry interlayer. No rail or bracket required subject to minimum width met.

Interlinking Rail

All monolithic toughened frameless glass balustrades must have an Interlinking Rail to conform to NZS 4223.3.2016, including the latest amendment of NZBC B1.

Compliance

Complies with AS/NZS 1170:2002, NZS 4223.3.2016, NZ Building Code B1, F2, F4 and F9.

Scope of Use

- The PlateFix PF150 system is ideal for external balconies and stairs - as well as for internal stairs and landings. It can be fixed directly to either timber, steel or concrete surfaces.
- When required an interlinking top rail finishes off the system, producing a low profile modern look.

Support Inquiries

 Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Outer Layer glass Thickness (Nominal mm)
15.2	8	1.2 EVA	6
17.2	8	1.2 EVA	8

Interlinking rail or stiffener brackets are required when specifying SAFELITE® EVA Toughened Laminated Safety Glass (minimum panel widths apply)

SAFELITE® STF (Sentry®) Toughened Laminated Safety Glass with rigid interlayer

Glass Thickness (Nominal mm)	Inner Layer of Glass Thickness (Nominal mm)	Interlayer Thickness (Nominal mm) and Type	Outer Layer glass Thickness (Nominal mm)
13.52	6	1.52 Sentry®	6
17.52	8	1.52 Sentry®	8

An interlinking rail is not required when specifying SAFELITE® STF (Sentry®) interlayer. (minimum panel widths apply).

Note: Inner layer refers to the balcony side.



SYSTEM

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PLATEFIX PF1

BALUSTRADE SYSTEM COMPONENTS

Individual Parts – PlateFix PF150

(Domestic and Commercial Applications)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
PLATEFIX PF150 HEAVYWEIGHT DOUBLE ANCHOR	300030	150x50mm with radius ends	SS	316 STAINLESS STEEL	ANCHOR DISC *Single or	BALUSTRADE SYSTEM	Internal & External
		20mm standoff GLASS THICKNESS: 12-17.52mm	ON REQUEST: PSS or POWDERCOAT		double point Fixing	(FACE FIX GLASS TO WALL)	௰௵

BALUSTRADE SYSTEM COMPONENTS



Balustrade Stiffener Brackets (For Aligning and Stiffening Panels)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
90 DEGREE STIFFENER BRACKET (GLASS TO WALL)	300153	65x55x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal 0 External
	300154	65x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				မ္လာ ရက
90 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300151	75x50x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal 8 External
	300152	88x55x25mm GLASS THICKNESS: 17.5-21.5mm	SS				<u> ျ</u> ို
180 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300149	70x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
26	300150	103x25mm GLASS THICKNESS: 17.5-21.5mm	SS				J℃ ∭

NOTE: All brackets are supplied with a selection of gaskets to suit glass thickness.



BALUSTRADE FIXING INDIVIDUAL COMPONENTS

Fixings: Rods, Anchors, Screws, Washers, Nuts

To suit Concrete and Steel Substrates (Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
PLATEFIX PF150 CSK SOCKET SCREW	500633	M10 x 120mm 50mm dia. washer M10 Hex Nut	SS	316 STAINLESS STEEL	CSK SCREW / WASHER / HEX NUT	FIXING COMPONENT FOR TIMBER *Double point Fixing x2 Fittings	Internal & External
PLATEFIX PF150 CSK SOCKET SCREW	500634	M12 x 130mm 50mm dia. washer M12 Hex Nut	SS ON REQUEST: POWDERCOAT	316 STAINLESS STEEL	CSK SCREW / WASHER / HEX NUT	FIXING COMPONENT FOR TIMBER *Single point Fixing	Internal 8 External
HILTI MASONRY SLEEVE	501149	10mm Masonry Sleeve M10 x 110mm CSK Socket Screw	SS	316 STAINLESS STEEL	10mm MASONRY SLEEVE	FIXING COMPONENT FOR MASONRY / CONCRETE *Double point Fixing x2 Fittings	Internal B External
HILTI MASONRY SLEEVE	501148	12mm Masonry Sleeve M12 x 125mm CSK Socket Screw	SS	316 STAINLESS STEEL	12mm MASONRY SLEEVE	FIXING COMPONENT FOR MASONRY / CONCRETE *Single point Fixing	Internal & External
PLATEFIX PF150 CSK SOCKET SCREW	500637	M10 x 50mm 50mm dia. washer M10 Hex Nut	SS	316 STAINLESS STEEL	CSK SCREW / WASHER / HEX NUT	FIXING COMPONENT FOR STEEL *Double point Fixing x2 Fittings	Internal & External
PLATEFIX PF150 CSK SOCKET SCREW	500638	M12 x 50mm 50mm dia. washer M12 Hex Nut	SS	316 STAINLESS STEEL	CSK SCREW / WASHER / HEX NUT	FIXING COMPONENT FOR STEEL *Single point Fixing	Internal & External
LINK RAIL LOCTITE 243	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL COMPONENT	Internal & External





S25 Link Rail





- 25 x 21mm 2205 Stainless Steel.
- Suitable for 10mm or 12mm Glass Thickness.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel finish standard, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL	300738	5800mm	SS	2205 STAINLESS STEEL	LINK RAIL	BALUSTRADE LINK RAIL	Internal & External
P		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
		OVERALL SIZE: 25 x 21mm					
S25 LINK RAIL WALL BRACKET (LEFT HAND)	300118	Suits S25 Rail	SS	2205 STAINLESS STEEL	WALL	BALUSTRADE LINK RAIL COMPONENT	Internal &
			ON REQUEST: POWDERCOAT		BRACKET		
							*
S25 LINK RAIL WALL BRACKET (RIGHT HAND)	301854	Suits S25 Rail	SS	2205 STAINLESS STEEL	WALL BRACKET	BALUSTRADE LINK RAIL COMPONENT	Internal & External
			ON REQUEST: POWDERCOAT				



S25 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL VERTICAL ADJUSTABLE JOINER	300863	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300862	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S25 LINK RAIL FIXED 90 DEGREE CORNER	300861	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL INLINE JOINER	300864	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	INLINE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 END CAP	300512	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	END CAP	BALUSTRADE LINK RAIL COMPONENT	Internal & External
LINK RAIL LOCTITE 243	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S25 LINK RAIL RUBBER GASKET	302091	Suits S25 Rail PER METRE LENGTH GLASS THICKNESS: 12mm	BLACK	RUBBER	RUBBER GASKET FOR S25 LINK RAIL	BALUSTRADE LINK RAIL COMPONENT	Internal & External
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS STEEL	GRUB SCREW	BALUSTRADE LINK RAIL FIXING	Internal Ə External



BALUSTRADE RAIL SYSTEM S40 Link Rail



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- 40 x 30mm 2205 Stainless Steel.
- Suitable for 12mm 21.5mm Glass Thickness.
- Rubber gasket available to suit respective glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel standard finish, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	300739	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 12 – 21.5mm OVERALL SIZE: 40 x 30mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
S40 LINK RAIL WALL BRACKET (LEFT HAND)	300156	Suits S40 Rail	SS	2205 STAINLESS STEEL	WALL BRACKET	BALUSTRADE LINK RAIL COMPONENT	Internal Ə External
			ON REQUEST: POWDERCOAT				
S40 LINK RAIL WALL BRACKET (RIGHT HAND)	301855	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External



S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL VERTICAL ADJUSTABLE JOINER	300868	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE VERTICAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S40 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300867	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S40 LINK RAIL FIXED 90 DEGREE CORNER	300866	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S40 LINK RAIL INLINE JOINER	300869	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	INLINE JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S40 END CAP	300513	Suits S40 Rail	SS	2205 STAINLESS	END CAP	BALUSTRADE	Internal 8
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
LINK RAIL LOCTITE 243	300961	Suits S40 Rail	ADHESIVE	50MM BOTTLE	TUBE LOCK ADHESIVE	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S40 LINK RAIL RUBBER GASKET	302092	Suits S40 Rail PER METRE LENGTH GLASS THICKNESS: 12-13.5mm	BLACK	RUBBER	RUBBER GASKET FOR S40 LINK RAIL	BALUSTRADE LINK RAIL COMPONENT	Internal & External
S40 LINK RAIL RUBBER GASKET	302093	Suits S40 Rail PER METRE LENGTH GLASS THICKNESS: 12-15mm	BLACK	RUBBER	RUBBER GASKET FOR S40 LINK RAIL	BALUSTRADE LINK RAIL FIXING	Internal & External





HARDWARE WARRANTY



S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	302094	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
RUBBER GASKET		PER METRE LENGTH			GASKET FOR S40 LINK RAIL		External
		GLASS THICKNESS: 13-16mm					
S40 LINK RAIL	302095	Suits S40 Rail	BLACK	RUBBER	RUBBER RUBBER GASKET FOR S40 LINK RAIL	BALUSTRADE	Internal &
RUBBER GASKET		PER METRE LENGTH				LINK RAIL COMPONENT	External
		GLASS THICKNESS: 16-19mm					
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS	GRUB SCREW	BALUSTRADE	Internal &
(retty				STEEL		LINK RAIL FIXING	External

BALUSTRADE RAIL SYSTEM Edgetec[®] 220 Link Rail



Aluminium LinkRail 38x30mm – For 12mm and 15mm Glass

- 38 x 30mm Aluminium Link Rail.
- Available in Natural Anodisied Finish 20 microns as standard or Silver Frost powdercoat. Special colours on request (Powdercoating or Anodising).
- Rubber gasket available to suit 12mm or 15mm glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.



Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	300728	5800mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL	300729	5800mm	SILVER FROST			LINK RAIL	External
FULL LENGTH	300727	5800mm	MILL FINISH				
		GLASS THICKNESS: 12-15mm OVERALL	ON REQUEST: POWDERCOAT				
		SIZE: 38 x 30mm					
EDGETEC® 220 LINK RAIL	300725	2900mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
HALF LENGTH	300726	2900mm	SILVER FROST			LINK RAIL	External
	300724	2900mm	MILL FINISH				
		(Half Length) GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	300593	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 12mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT	
EDGETEC® 220	300594	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 15mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT *For a 5.8m Link Rail x2 rubber gaskets lengths are required	
EDGETEC [®] 220	300847	80x22.8x5mm	MILL	ALUM 6063	180 DEGREE	BALUSTRADE	Internal &
					STRAIGHT JOINER	LINK RAIL COMPONENT	External
EDGETEC® 220	300848	50 x 50 x 5mm	MILL	ALUM 6063	90 DEGREE	BALUSTRADE	Internal &
LINK RAIL 90 DEGREE JOINER					CORNER JOINER	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300493	38.4 x 30.4mm	ANOD – Natural	ALUM 6063	END CAP	BALUSTRADE	Internal &
END CAP	300494	38.4 x 30.4mm	SILVER FROST				External
	300492	38.4 x 30.4mm	MILL			COMPONENT	
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220 LINK RAIL FIXED	301985	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	90 DEGREE CORNER	BALUSTRADE LINK RAIL	Internal & External
90 DEGREE CORNER			CONNECTOR	COMPONENT			
		(Component)	ON REQUEST: POWDERCOAT				





Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	301987	Suits Edgetec®	SILVER FROST	ALUM 6063	ADJUSTABLE	BALUSTRADE	Internal &
LINK RAIL HORIZONTAL ADJUSTABLE	301988	220 Rail Suits Edgetec® 220 Rail	MILL		HORIZONTAL JOINER	LINK RAIL COMPONENT	External
JOINER		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220 LINK RAIL	301989	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	ADJUSTABLE VERTICAL	BALUSTRADE LINK RAIL	Internal & External
VERTICAL ADJUSTABLE JOINER	301990	Suits Edgetec® 220 Rail	MILL		JOINER	COMPONENT	
i.		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220	301003	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)	301004	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC [®] 220	301005	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)	301006	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC [®] 220	301002	100 x 65mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT	301149	100 x 65mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC® 220	301991	60 x 46mm	SILVER FROST	ALUM 6063	POST END	BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT*	301992	60 x 46mm	MILL		MOUNT FOR AP65	LINK RAIL COMPONENT	External
*Suits AP65 Series Aluminium Post		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
SCREW	301993	6G x 1/4" Sq	SS	304 STAINLESS	SCREW	PAN HEAD	Internal &
(GLASS THICKNESS: 12mm, 15mm		STEEL		SCREW SUITS COMPONENT 300847 300848 301985 301986 301003 301004 301005 301006 301006 301002 301149 301991 301992	
SILICONE -	300011	V60	ADHESIVE	CARTRIDGE	SILICONE	FIXING	Internal &
						COMPONENT	





Design Tables

Occupancy A

All areas within or serving one dwelling including stairs, landings etc. but excluding external balconies and edges of roofs, as per NZS1170.1 Table 3.3

Glass Thickness	Maximum	Substrate	Horizontal Clamp		Design loads to	o substructure	
t (mm)	Height H (mm)	Material	Spacing (mm)	M* (kNm/m)	T* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12, 13.52, 15.2 15, 17.2, 17.52	1150	T, C, S	500	1.08	9.45	-	-

T = Timber, C = Concrete, S = Steel

T1* = tension for single fixing, applies to concrete 8 steel only T2* = tension for dual fixing

Occupancy A/C3/B/E As per NZS1170.1 Table 3.3

Glass Thickness	Maximum	Substrate	Horizontal Clamp		De	sign loads to	o substructure	
t (mm)	Height H (mm)	Material	Spacing (mm)	M* (kNm/m)	T1* (kN)	T2* (kN)	SLS Wind (kPa)	ULS Wind (kPa)
12, 13.52, 15.2	950	T, C, S	450	1.13	8.94	6.61	1.44	2.13
	1050	T, C, S	400	1.24	8.70	6.44	1.31	1.94
13.52, 15.2	1100	T, C, S	400	1.29	9.08	6.72	1.26	1.86
	1150	C, S	400	1.35	9.45	7.00	1.21	1.79
15.2, 17.2, 17.52	950	T, C, S	450	1.13	8.94	6.61	1.44	2.13
	1050	T, C, S	400	1.24	8.70	6.44	1.31	1.94
	1100	T, C, S	400	1.29	9.08	6.72	1.26	1.86
	1150	C, S	400	1.35	9.45	7.00	1.21	1.79
	1250	C, S	400	1.46	10.20	7.57	1.12	1.66

Free Standing Pool Fences

(not protecting a fall of 1.0m or more)

Glass Thickness	NZS3604 Wind	Maximum Height H	Horizontal Clamp	De	sign loads to substruct	ure
t (mm)	Zone	(mm)	Spacing (mm)	M* (kNm/m)	T1* (kN) (C, S)	T2* (kN) (T, C, S)
12	Up to High	1250	400	0.97	7.09	5.19
15	Very High	1250	400	1.26	9.15	6.70
15	Extra High	1250	300	1.52	8.31	6.08

Suitable substrate materials: T = Timber, C = Concrete, S = Steel

Glass thickness key:

Glass	Inner layer ³	Interlayer thickness	Outer layer glass	Panel	size requirements
Thickness t (mm)	glass thickness (mm)	(mm) and type	thickness (mm)	Minimum panel width (mm)	Maximum panel width (mm)
12	-	-	-	1000	1700/1900 (see Opp. page)
13.52	6	1.52 SAFELITE STF	6	1700	Refer manufacturing limits
15	-	-	-	1000	1700/1900 (see Opp. page)
15.2	8	1.2 SAFELITE EVA	6	1000	1700/1900 (see Opp. page)
17.2	8	1.2 SAFELITE EVA	8	1000	1700/1900 (see Opp. page)
17.52	8	1.52 SAFELITE STF	8	1100	Refer manufacturing limits

NOTE: Inner layer refers to balcony side.



Design Tables

Maximum panel widths for Interlinking Rail/Bracket systems:

Applies where barrier is protecting a fall of 1.0m or more.

Interlinking Rail System	Maximum panel width (mm)	Position
S25 1700 S40 Edgetec® 220	1700 1700/1900 1700/1900	on glass only HB50 bracket/on glass HB50 bracket/on glass
MFG SB Bracket on SAFELITE® only	1900	100mm - 200mm from top of glass

Post failure requirements:

Applies where barrier is protecting a fall of 1.0m or more

Glass Type	Requirement
TEMPAFLOAT [®]	Interlinking rail required in all cases
SAFELITE® EVA	Interlinking rail or SB brackets required all cases
SAFELITE® STF (Sentry®)	No interlinking rail required, minimum panel widths apply

- 1. Design tables only valid for use with Metro PF150 balustrade system.
- 2. Refer to installation and elevation drawings for Height 'H'.
- 3. The specifier must ensure the balustrade height above floor level requirements as per the NZ Building Code are complied with.
- 4. T1* refers to single fixing connections, and are not suitable for use with timber. T2* refers to dual fixing details.
- Design loads are in accordance with AS/NZS 1170.1:2002 table 3.3 and NZBC B1/VM1 and DBH Guidance on Barrier Design (March 2012).
- 6. M* & T1*, T2* denote bending moment (kNm/m width) and tension loads (kN/fixing for single and dual fixing) respectively to be supported by the sub structure.
- 7. Capacity of all substructure is to be verified by building engineer or checked for accordance with NZS3604 (where applicable) prior to fixing.
- Fixing centres in tables above are applicable to concrete, steel and (where allowed) timber. Refer to fixing detail drawings for further details.
- 9. All glass is to be toughened safety glass supplied by Metro Performance Glass, in either TEMPAFLOAT® Monolithic, SAFELITE® EVA Laminated or SAFELITE® STF (Sentry®) Laminated variants subject to requirements of the tables above.
- 10. Glass & interlayer thicknesses shown are nominal thickness. Table is based on glass minimum tolerance as per NZS 4223.1:2008.
- Refer to the relevant fixing details on drawings: PF150/C/RA-M12, PF150/C/RA-M10, PF150/S/RN(OPEN)-M12, PF150/S/RN(OPEN)-M10, PF150/S/RN(CLOSED)-M12, PF150/S/ RN(CLOSED)-M10, PF150/T/RN and PF150/T/CS.
- 12. The tables for this balustrade system are based on an SLS deflection limit of 50mm. While greater than the suggested limit of height/60 as specified in NZS1170.0 for post and rail handrail systems, this is deemed acceptable based on the nature of the cantilevered glass system.
- 13. In all cases the PF150 fixings must be fixed with Nylon gasket directly to the relevant supporting structure.
- 14. For designs outside the scope of these tables and ULS wind pressures exceeding those shown, specific design is required.
- 15. Minimum glass strength 100MPa, all edges polished.
- 16. Maximum 10mm tolerance allowed to H heights noted in table.
- 17. Monolithic glass options only applicable for situations where all parts of glazing are within 5000mm of adjacent lower floor/ ground below.
- Pool fences listed above refer to free standing structures where safety from falling is not applicable, design is based on Importance Level 1.
- 19. For safety from falling barriers other than 'A occupancy', fixing to timber only suitable for H \leq 1100mm.



Section and Exploded Views

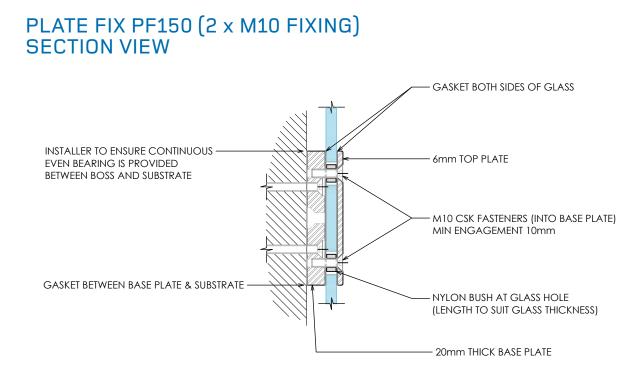
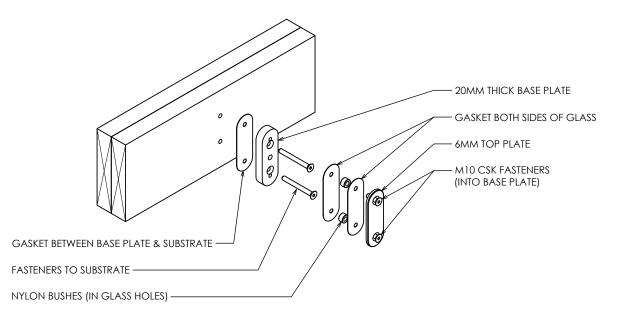


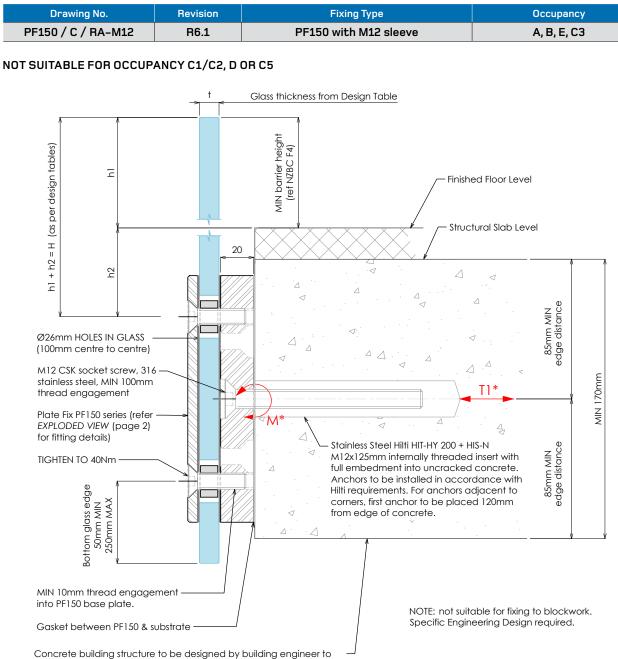
PLATE FIX PF150 STANDARD FITTING EXPLODED VIEW



PLATEFIX PF150 SYSTEM



Concrete Fixing Detail



Concrete building structure to be designed by building engineer to support loads as specified on Plate Fix PF150 balustrade system design table. Minimum 25MPa uncracked concrete, 170mm Min thickness.

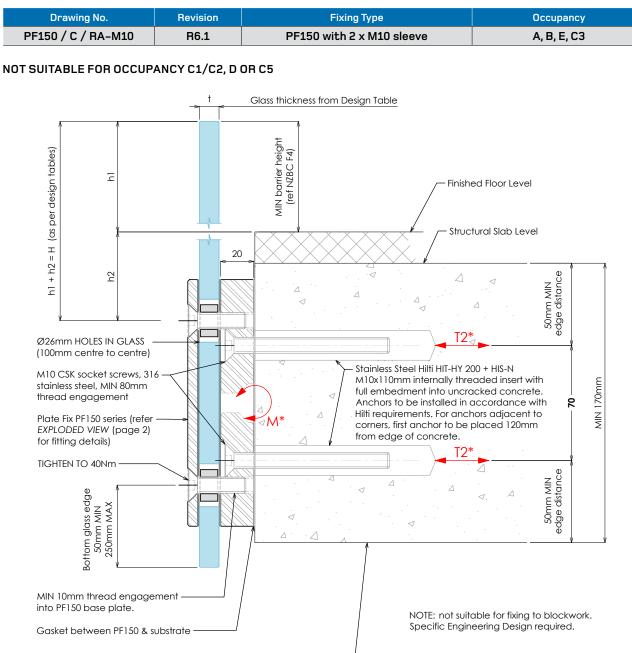
Refer to Plate Fix PF150 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M* and T* specified on Plate Fix PF150 balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with Plate Fix PF150 balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) No substitution allowed any variation from the details above and design tables will require specific design.



Concrete Fixing Detail



Concrete building structure to be designed by building engineer to support loads as specified on Plate Fix PF150 balustrade system design table. Minimum 25MPa uncracked concrete, 170mm Min thickness.

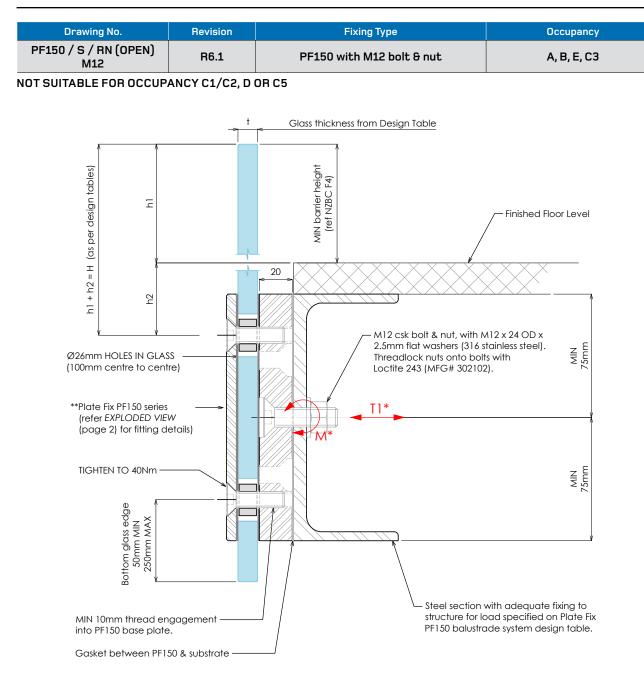
Refer to Plate Fix PF150 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

- 1) Capacity of structure is to be of sufficient strength to support loads M* and T* specified on Plate Fix PF150 balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with Plate Fix PF150 balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) No substitution allowed any variation from the details above and design tables will require specific design.



Steel Fixing Detail

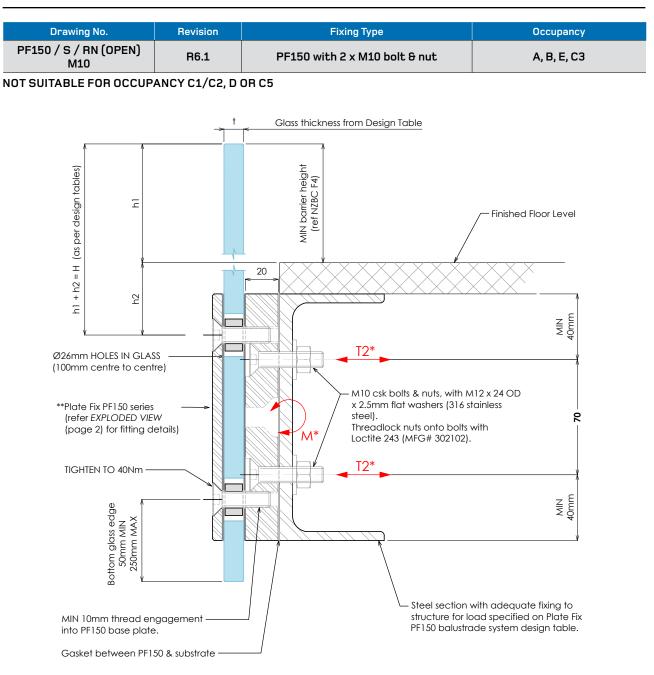


Refer to Plate Fix PF150 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

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- 2) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with Plate Fix PF150 balustrade system design table.
- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) For fixing to steel substrates, the installer shall ensure the bolts are tightened to a "snug-tight" level as defined in NZS3404.
- 5) No substitution allowed any variation from the details above and design tables will require specific design.



Steel Fixing Detail

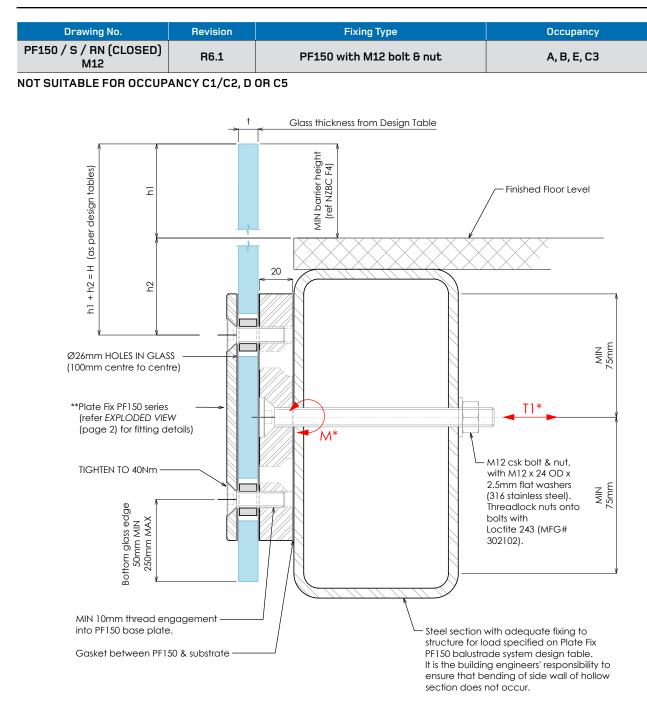


Refer to Plate Fix PF150 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

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- 4) For fixing to steel substrates, the installer shall ensure the bolts are tightened to a "snug-tight" level as defined in NZS3404.
- 5) No substitution allowed any variation from the details above and design tables will require specific design.



Steel Fixing Detail

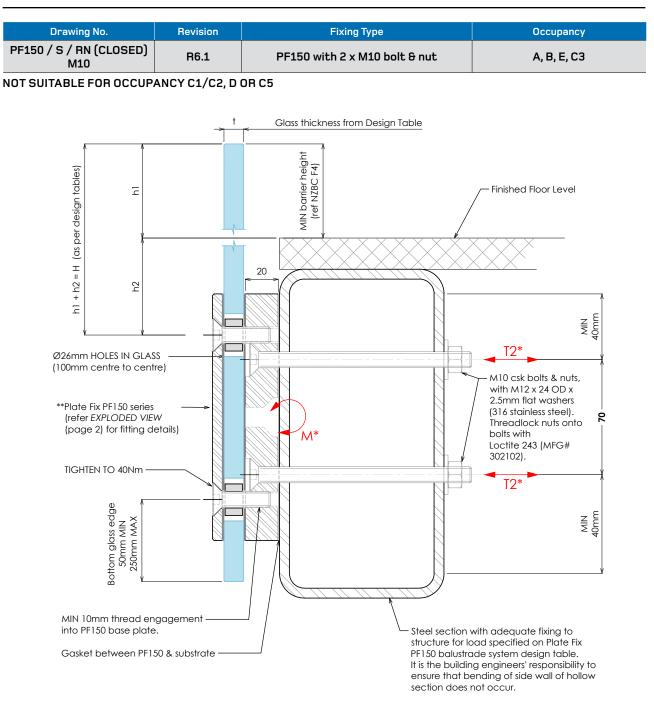


Refer to Plate Fix PF150 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

- 1) Capacity of structure is to be of sufficient strength to support loads M* and T* specified on Plate Fix PF150 balustrade system design table. Structure capacity to be verified by building engineer prior to fixing balustrade.
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- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
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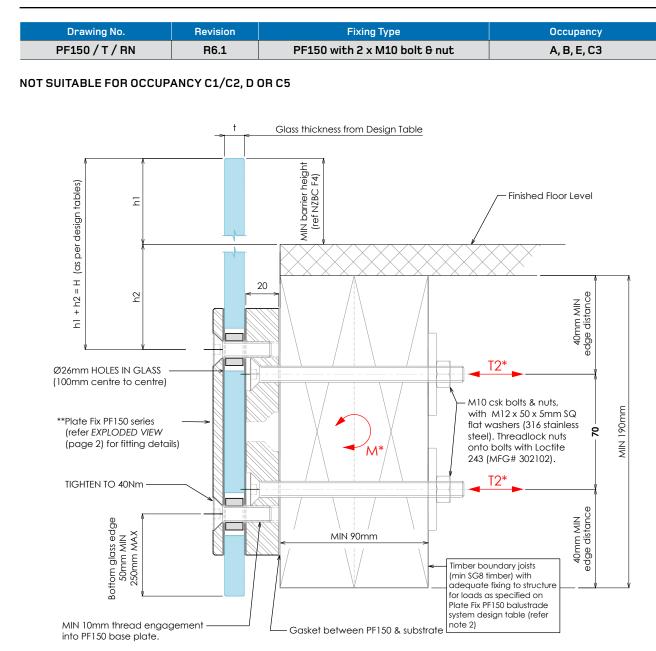
Steel Fixing Detail



Refer to Plate Fix PF150 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

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- 3) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 4) For fixing to steel substrates, the installer shall ensure the bolts are tightened to a "snug-tight" level as defined in NZS3404.
- 5) No substitution allowed any variation from the details above and design tables will require specific design.

Timber Fixing Detail



Refer to Plate Fix PF150 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

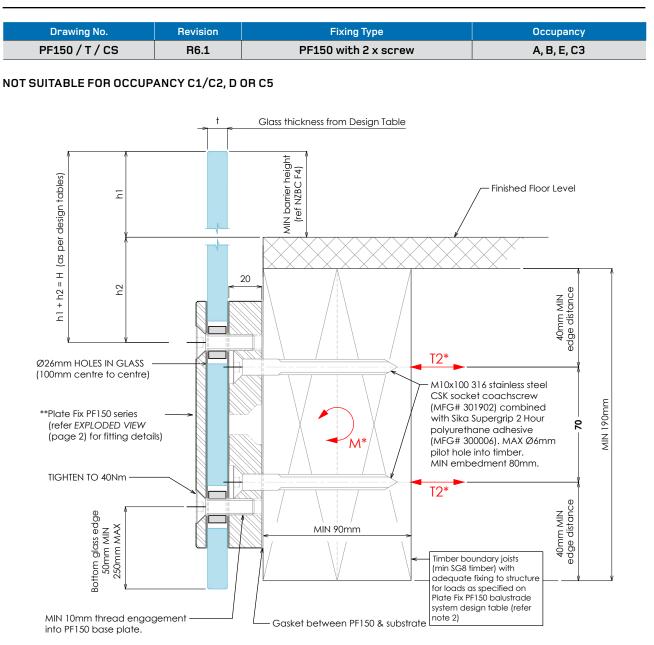
NOTES:

- Capacity of structure is to be of sufficient strength to support loads M* and T* specified on Plate Fix PF150 balustrade system design table. Structure capacity to be verified by building engineer where applicable or checked to NZS3604 requirements prior to fixing balustrade.
- 2) Timber decks designed to NZS 3604:2011 guidelines will meet loading requirement, **except for decks including cantilever floor joists where specific design is required.**
- 3) Max loading to comply with AS/NZS 1170.1:2002 Minimum Imposed Actions for Barriers Occupancy, shown at top of drawing, for design in accordance with Plate Fix PF150 balustrade system design table.
- 4) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
- 5) For fixing to timber substrates, the installer shall ensure that the bolt / coach screw is sufficiently tightened to reduce movement of the bolt head and washer. Care should be taken not to over tighten the fixings that would cause crushing of the timber or compromise the thread leading to anchor pull-out.
- 6) No substitution allowed any variation from the details above and design tables will require specific design.
- 7) Fixings to timber must be re-tightened 2 months after installation and periodically thereafter to allow for timber shrinkage.

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Timber Fixing Detail



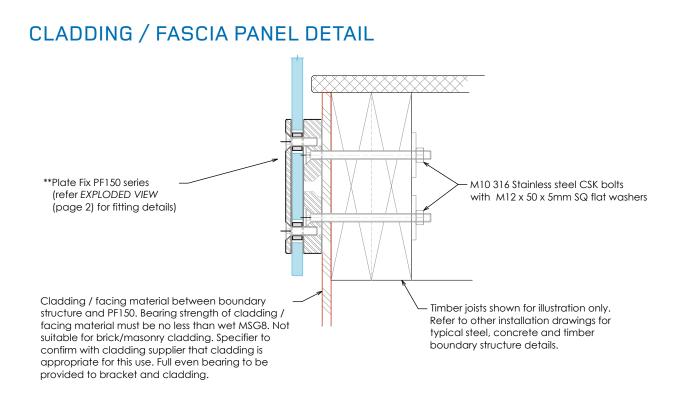
Refer to Plate Fix PF150 balustrade system design table for required glass thickness, fixing spacings and fixing loads according to AS/NZS 1170.1:2002 for the occupancies listed above. Refer to design tables and elevations for post failure requirements. Interlinking rail / clips not shown for clarity. 'H' refers to top of barrier.

NOTES:

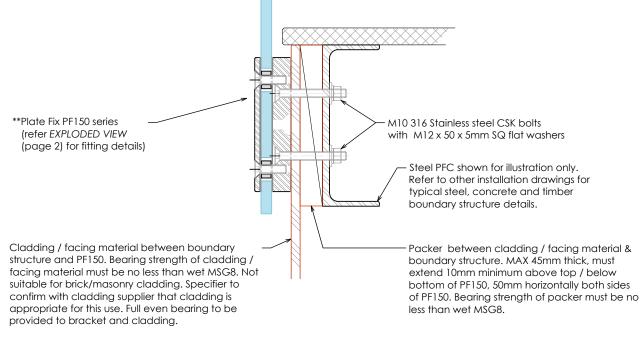
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- 4) Penetration through a membrane must be completed in accordance with written instructions of the membrane manufacturer.
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- 6) No substitution allowed any variation from the details above and design tables will require specific design.
- 7) Fixings to timber must be re-tightened 2 months after installation and periodically thereafter to allow for timber shrinkage.



Cladding / Fascia Installation Details



CLADDING / FASCIA PANEL DETAIL WITH CAVITY



NOTE: For PF150 clamps connected to steel/concrete and bearing on timber cladding, facing material and/or timber packers, clamp spacing and balustrade height must be selected in accordance with timber substrate requirements in design tables.



1

PLATEFIX PF150 SYSTEM SAFELITE® STF (Sentry®) Glass

PLATEFIX PF150 SYSTEM

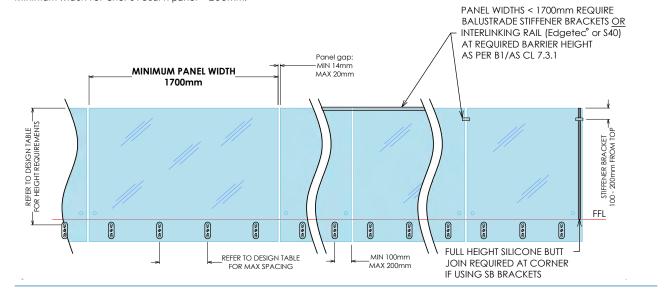
SAFELITE[®] STF (Sentry[®]) 13.52mm

PANEL WIDTH NOTES:

Balustrade stiffener brackets or interlinking rail required for panels <1700mm. Minimum panel width where two or more panels are in a straight line = 1000mm. Minimum width for short return panel = 200mm.

Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



PLATEFIX PF150 SYSTEM SAFELITE STF 17.52mm

PANEL WIDTH NOTES:

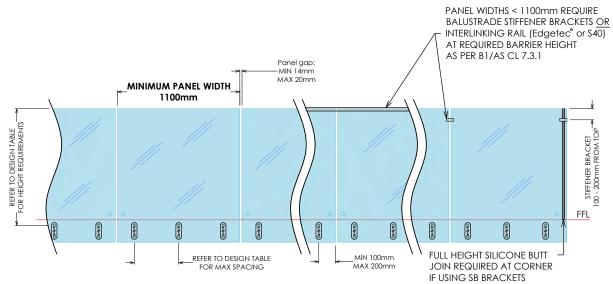
Balustrade stiffener brackets or interlinking rail required for panels <1100mm.

Minimum panel width where two or more panels are in a straight line = 1000mm.

Minimum width for short return panel = 200mm.

17.52mm – Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.





SAFELITE[®] EVA Glass

PLATEFIX PF150 SYSTEM

SAFELITE® STF (Sentry®) 15.2mm, 17.2mm

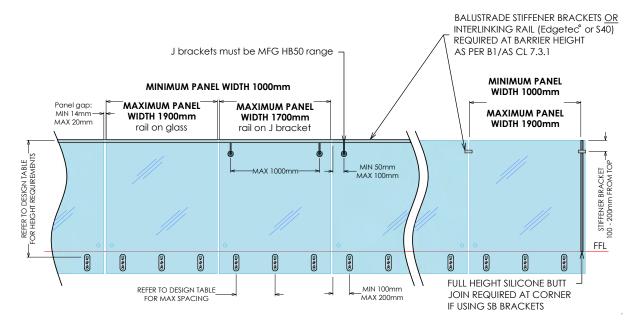
PANEL WIDTH NOTES:

Minimum panel width where two or more panels are in a straight line = 1000mm.

Minimum width for short return panel = 200mm.

Residential & Commercial Occupancy types A, A other, C3, B and E.

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



PLATEFIX PF150 SYST



TEMPAFLOAT® Glass

PLATEFIX PF150 SYSTEM

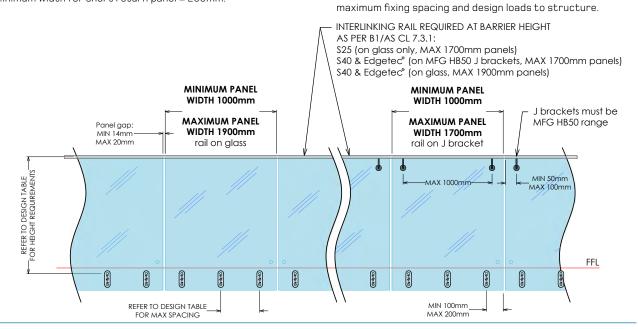
TEMPAFLOAT® 12mm

PANEL WIDTH NOTES:

Minimum panel width where two or more panels are in a straight line = 1000mm.

Minimum width for short return panel = 200mm.

1



PLATEFIX PF150 SYSTEM

TEMPAFLOAT® 15mm

PANEL WIDTH NOTES:

Minimum panel width where two or more panels are in a straight line = 1000 mm.

Minimum width for short return panel = 200mm.

Residential & Commercial Occupancy types A, A other, C3, B and E.

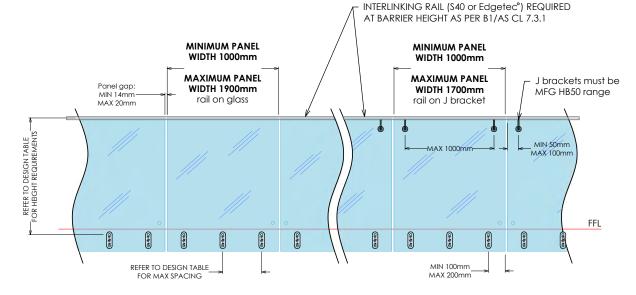
Residential & Commercial

Occupancy types A, A other, C3, B and E.

Refer to design table for maximum glass height,

GLASS & FIXING SPECIFICATIONS:

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.





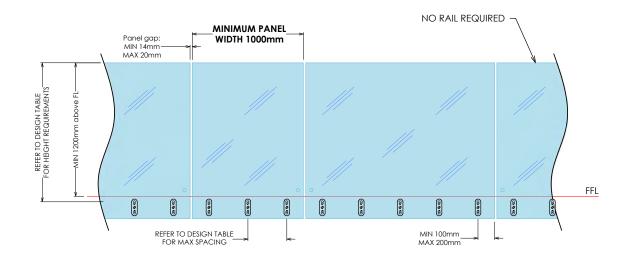
Pool Fence

PLATEFIX PF150 SYSTEM

POOL FENCE ONLY – TEMPAFLOAT 12 & 15mm

GLASS & FIXING SPECIFICATIONS: Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure. APPLIES TO FREE STANDING POOL FENCES NOT PROTECTING A FALL OF > 1000mm.

As of Jan 2017, complies with Building Code clause F9 & section 162C of the building Act.



 $\label{eq:intermediate} IMPORTANT NOTE: The substructure to which the balastrade is to be attached must be designed by a structural engineer to resist the relevant balastrade actions as per B1/VM1.$



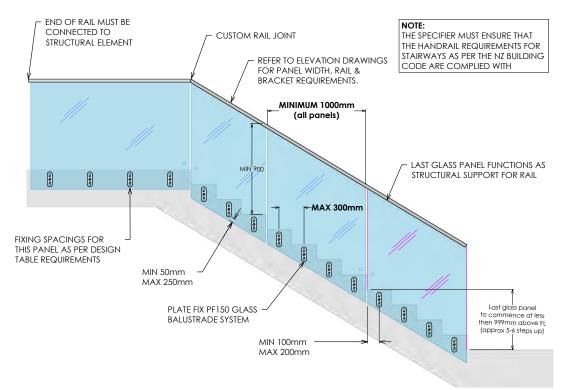
PLATEFIX PF150 ELEVATION

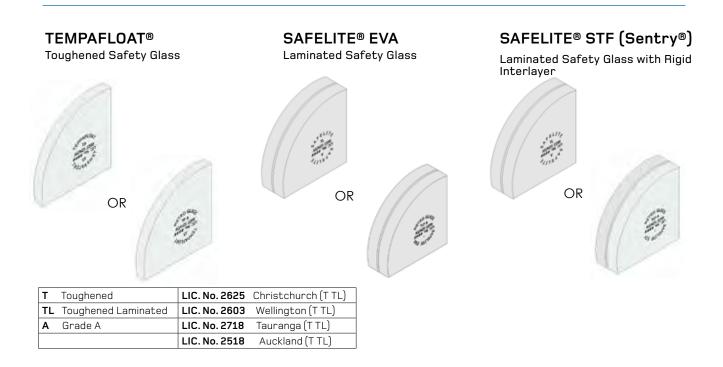
Stair Balustrade

PLATEFIX PF150 SYSTEM STAIR BALUSTRADE

GLASS & FIXING SPECIFICATIONS:

Refer to design table for maximum glass height, maximum fixing spacing and design loads to structure.



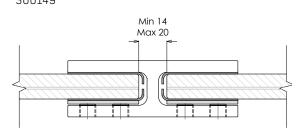




Balustrade Stiffener Brackets

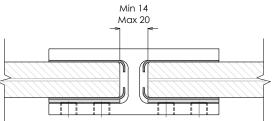
STRAIGHT BRACKET

13.5–15.5mm GLASS 300149



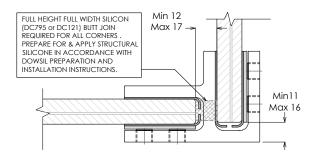
STRAIGHT BRACKET

17.52 – 21.52mm GLASS 300150



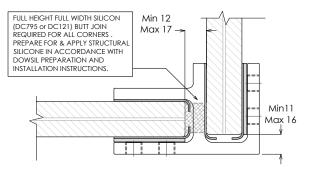
CORNER BRACKET

13.5–15.5mm GLASS 300151



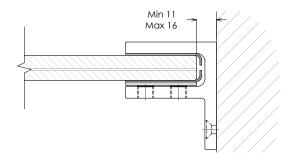
CORNER BRACKET

17.52 – 21.52mm GLASS 300152



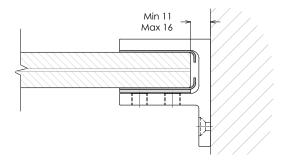
WALL BRACKET

13.5–15.5mm GLASS 300153



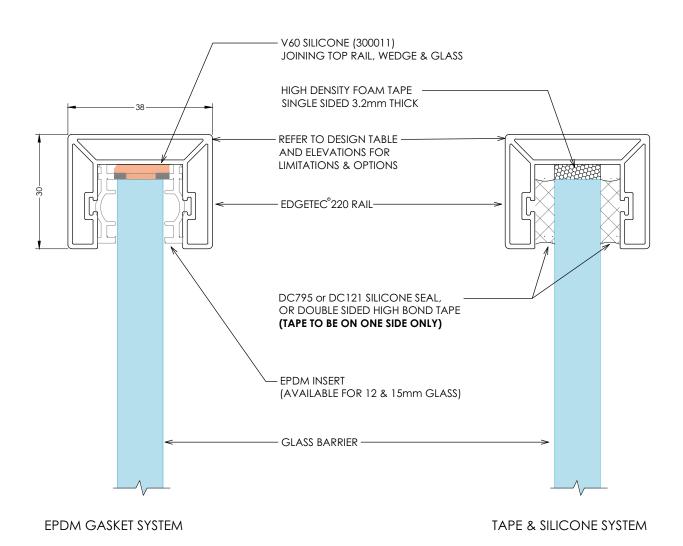
WALL BRACKET

17.52 – 21.52mm GLASS 300154





Edgetec[®] 220 Link Rail



INSTALLATION NOTES:

- 1. Cut short lengths of gasket (nom 50mm) and place at approximately 700mm centres.
- 2. Cut / adjust interlinking rail to correct dimensions and test in position.
- 3. Remove all parts from glass barrier and install full cut lengths of gasket to top edge of glass barrier.
- 4. Assemble top rail, joiners and suitable end plates.
- 5. Place blobs of v60 silicone in every gasket hole.
- 6. Place top rail extrusion, joiners and end plates in position on glass barrier, clipping firmly to gasket.
- 7. Tape assembled components down to glass barrier and wait 24hrs to fully bond.
- 8. Clean up any excess silicone.

Note: rail ends must be attached to structure or structural post. Extrusion joins must have a suitable joiner plate

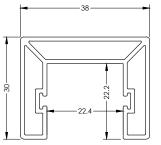
IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1



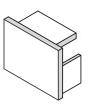
Edgetec[®] 220 Link Rail

Edgetec® 220 Rail for 12mm & 15mm Glass

Full Length (5800mm) 300729 Half Length (2900mm) 300726 38x30mm



Edgetec[®] 220 Rail End Cap (300494) 38x30mm



JOINERS NOM. 22.5 X 5MM ALUMINIUM

Edgetec[®] 220 Rail Horizontal

Fixed Joiner (#301985)

Edgetec[®] 220 Rail

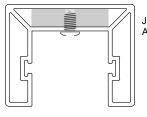
Black EPDM Gasket (2900mm length) for 12mm Glass 300593 for 15mm Glass 300594



Joiners: (After cutting extrusions to length)

- With Joiner in place, spot drill from below for position

- Drill out to joiner to 3mm dia, extrusion to 4mm dia
- Use No 6 x 1/4in SS ST Pan sq drive Screw (301993)



Edgetec® 220 Rail Inline Joiner (#300847)

Edgetec[®] 220 Rail Vertical

Adjustable Joiner (#301990)

Edgetec[®] 220 Rail Wall

* Suits AP65 Aluminium Post

www.metroglass.co.nz

Bracket Post End*

(#301992)

60x46mm

80x22.5x5mm

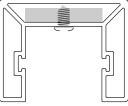
Joiners both 22.5 x 5mm Aluminium

End Plates: (After cutting extrusions to length)

- With End Plate in place, spot drill from below for position

- Drill out to SS tab to 3mm dia, extrusion to 4mm dia
- Use No 6 x 1/4in SS ST Pan sq drive Screw (301993)
- End Plate must be securely attached to Post or structure.

Edgetec® 220 Rail Fixed 90 Degree Joiner (#300848)



50x50x5mm

End Plate Tabs all 22.5 x 4mm SS.



Edgetec[®] 220 Rail Horizontal

Adjustable Joiner (#301988)



Edgetec[®] 220 Rail Wall **Bracket Left Hand** (#301004)120x45mm



Edgetec[®] 220 Rail Wall **Bracket Right Hand** (#301006) 120x45mm



Edgetec[®] 220 Rail Wall **Bracket Post End** (#301149)100x45mm



TABS ALL 22.5 X 4MM. FRONT FACES ALL 3MM.

IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl7.3.1

1 LATEFIX PF150 SYST



S25 RAIL - TYPICAL INSTALLATIONS

S25 Link Rail

S25-01

1

HIGH DENSITY FOAM TAPE SINGLE SIDED 3.2mm THICK REFER TO DESIGN TABLE AND ELEVATIONS FOR LIMITATIONS & OPTIONS S25 LINK RAIL 300738 S31803 GRADE SS DC795 or DC121 SILICONE SEAL, OR DOUBLE SIDED HIGH BOND TAPE (TAPE TO BE ON ONE SIDE ONLY) EPDM INSERT FOR 12mm GLASS (302091)

12mm TEMPAFLOAT

EPDM GASKET SYSTEM

TAPE & SILICONE SYSTEM

NOTES:

- 1. Interlinking rail details are only to be used on metro performance glass. Cantilevered glass balustrades.
- 2. Prepare for and apply DC795 & DC121 structural silicone in accordance with dow. Corning preparation and installation instructions.
- 3. Interlinking rail splice ϑ corner connections are shown on drawings S25-02 ϑ S25-03
- 4. Interlinking rail end connection brackets & attachment details are shown on drawings S25-04 to S25-08.
- 5. All screws to be stainless steel with a minimum ultimate shear strength of 3.5kN (per Screw).
- 6. Link rail section and connection pieces to be S31803 grade stainless steel, In accordance with NZS 4673:2001.
- 7. Refer to warranty & maintenance pages for periodic inspection, cleaning & maintenance requirements.

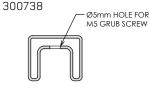


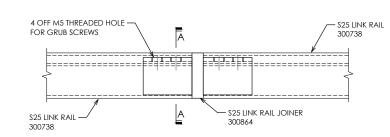
S25 Link Rail

S25-02 S25 RAIL - SPLICE CONNECTION DETAIL

All fixings to be stainless steel

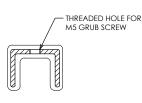
S25 LINK RAIL SECTION





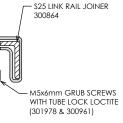
S25 LINK RAIL - SPLICE CONNECTION ELEVATION

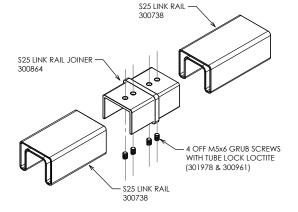
S25 LINK RAIL INLINE JOINER 300864





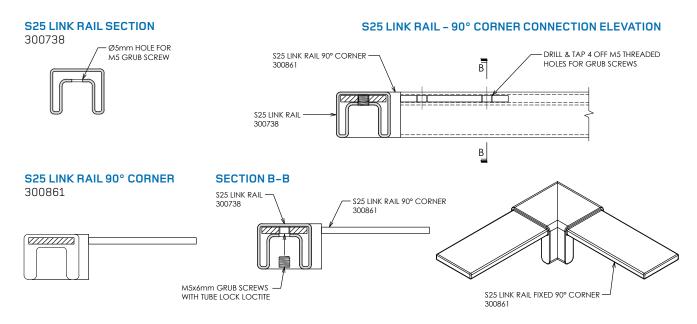
300738





S25-03 S25 RAIL - 90° CORNER CONNECTION DETAIL

All fixings to be stainless steel



IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

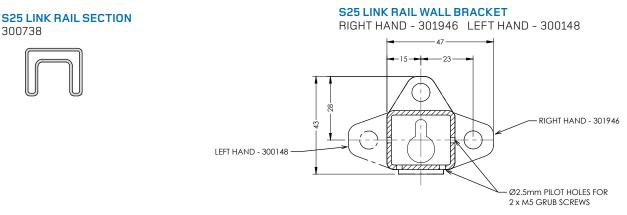
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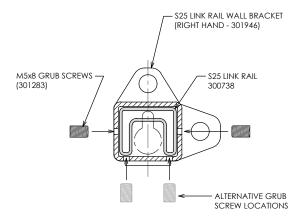
S25 Link Rail

S25-04 S25 RAIL WALL BRACKET All fixings to be stainless steel

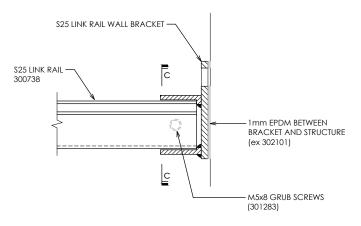


SECTION C-C

300738



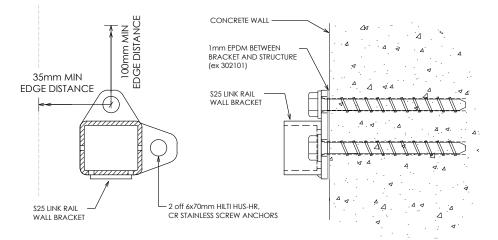
S25 LINK RAIL - END BRACKET SECTION



S25-05 S25 RAIL - END BRACKET CONCRETE WALL ATTACHMENT All fixings to be stainless steel

NOTES:

- 1. Concrete wall is to be designed by project structural engineer for loads Imposed by balustrade. ULS Point load, n* = 0.9kN -
 - Inwards, outwards or down.
- 2. Concrete wall to be minimum 140mm thick.
- 3. Concrete wall must be reinforced & is to be designed & detailed in accordance with NZS3101.
- 4. Minimum concrete strength = 20MPa.



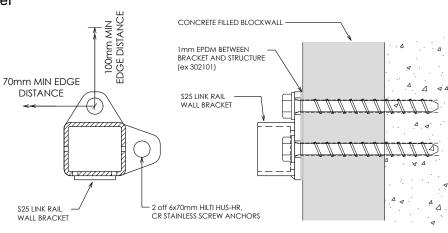


S25 Link Rail

S25-06 S25 RAIL - END BRACKET BLOCKWALL ATTACHMENT All fixings to be stainless steel

NOTES:

- Blockwall is to be designed by Project structural engineer for loads imposed by Balustrade. ULS point load, n* = 0.9kN - inwards, outwards or Down.
- 2. Minimum blockwall thickness = 140mm.
- Blockwall must be corefilled / Reinforced θ is to be designed θ detailed in Accordance with NZS4230 or NZS4229.
- 4. Minimum corefill concrete Strength = 17.5MPa.



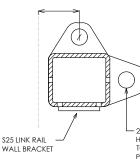
S25-07 S25 RAIL – END BRACKET WEATHERBOARD ATTACHMENT

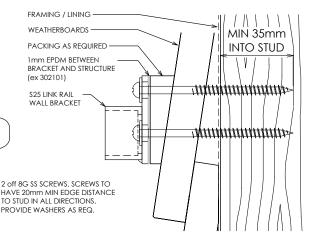
All fixings to be stainless steel

NOTES:

- Timber stud wall is to be designed by project Structural engineer for loads imposed by balustrade. ULS Point load, n* = 0.9kN - Inwards, outwards or down.
- 2. Minimum stud size = 90x45.
- 3. Minimum timber grade = SG8.
- Timber stud wall to be Designed θ detailed in accordance with NZS3603 or NZS3604.

20mm MIN EDGE DISTANCE TO STUD



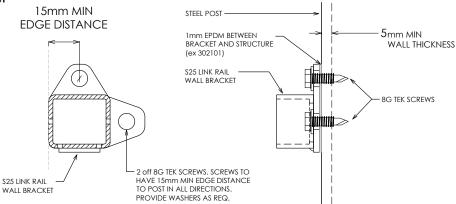


S25-08 S25 RAIL - END BRACKET STEEL POST ATTACHMENT

All fixings to be stainless steel

NOTES:

- Steel post is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Building designer to ensure durability requirements of connection are met.
- 3. Minimum steel post wall thickness = 5mm.
- 4. Minimum steel grade = 300MPa.



IMPORTANT NOTE: Conforming to NZS 4223.3.2016 and Building Code Clause B1/AS1 Cl 7.3.1

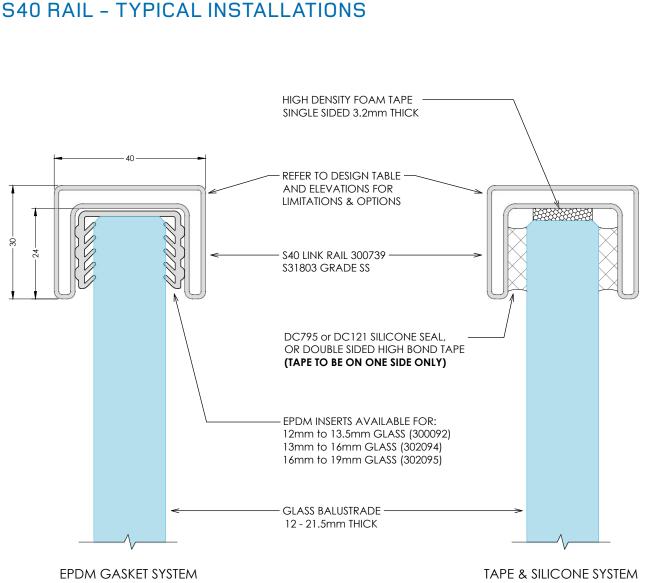
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Balustrade Systems



S40 Link Rail

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NOTES:

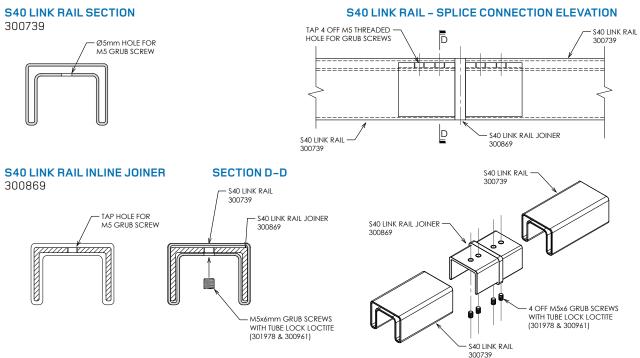
- 1. Interlinking rail details are only to be used on metro performance glass cantilevered glass balustrades.
- 2. Prepare for and apply DC795 & DC121 structural silicone in accordance with dow corning preparation and installation instructions.
- 3. Interlinking rail splice ϑ corner connections are shown on drawings S40-02 ϑ S40-03
- 4. Interlinking rail end connection brackets & attachment details are shown on drawings S40-04 to S40-08.
- 5. All screws to be stainless steel with a minimum ultimate shear strength of 3.5kN (per screw).
- 6. Link rail section and connection pieces to be S31803 grade stainless steel, in accordance with NZS 4673:2001.
- 7. Refer to warranty & maintenance pages for periodic inspection, cleaning & maintenance requirements.



S40 Link Rail

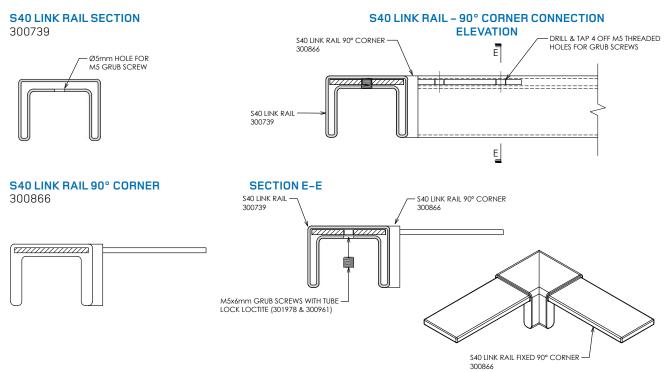
S40-02 S40 RAIL - SPLICE CONNECTION DETAIL

All fixings to be stainless steel



S40-03 S40 RAIL - 90° CORNER CONNECTION DETAIL

All fixings to be stainless steel

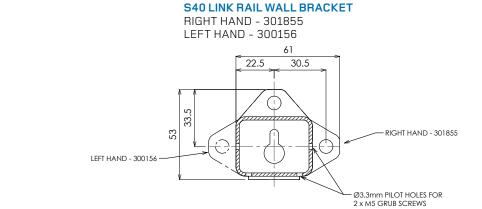


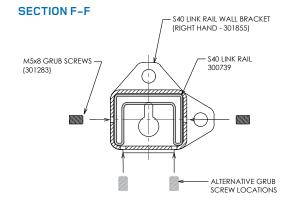


S40 Link Rail

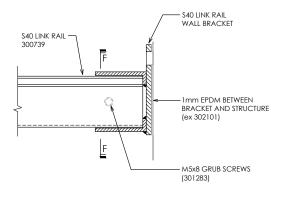
S40-04 S40 RAIL WALL BRACKET All fixings to be stainless steel

S40 LINK RAIL SECTION 300739





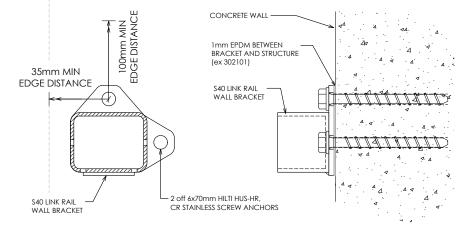
S40 LINK RAIL - END BRACKET SECTION



S40-05 S40 RAIL - END BRACKET CONCRETE WALL ATTACHMENT All fixings to be stainless steel

NOTES:

- Concrete wall is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Concrete wall to be minimum 140mm thick.
- 3. Concrete wall must be reinforced δ is to be designed δ detailed in accordance with NZS3101.
- 4. Minimum concrete strength = 20MPa.



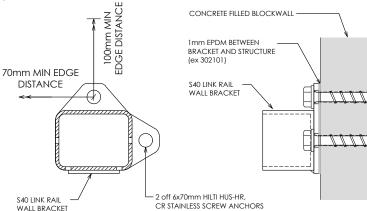


S40 Link Rail

S40 - 06S40 RAIL - END BRACKET BLOCKWALL ATTACHMENT All fixings to be stainless steel

NOTES:

- 1. Blockwall is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Minimum blockwall thickness = 140mm.
- 3. Blockwall must be corefilled / reinforced & is to be designed & detailed in accordance with NZS4230 or NZS4229.
- 4. Minimum corefill concrete strength = 17.5MPa.



S40 RAIL - END BRACKET WEATHERBOARD ATTACHMENT

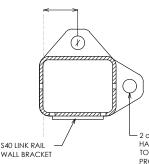
All fixings to be stainless steel

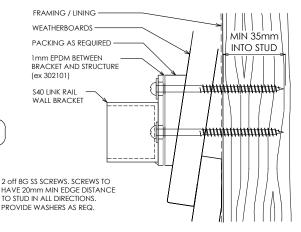
NOTES:

S40-07

- 1. Timber stud wall is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Minimum stud size = 90x45.
- 3. Minimum timber grade = SG8.
- 4. Timber stud wall to be designed & detailed in accordance with NZS3603 or NZS3604.

20mm MIN EDGE DISTANCE



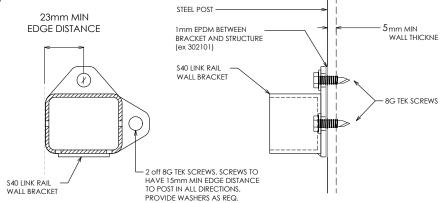


S40-08 S40 RAIL - END BRACKET STEEL POST ATTACHMENT

All fixings to be stainless steel

NOTES:

- 1. Steel post is to be designed by project structural engineer for loads imposed by balustrade. ULS point load, n* = 0.9kN - inwards, outwards or down.
- 2. Building designer to ensure durability requirements of connection are met.
- 3. Minimum steel post wall thickness = 5mm.
- 4. Minimum steel grade = 300MPa.





SYSTEM

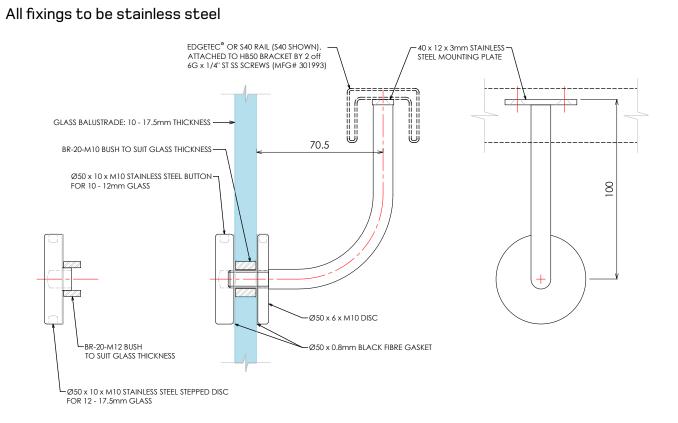
0 2

PLATEFIX PF1

PLATEFIX PF150 RAIL & BRACKETS

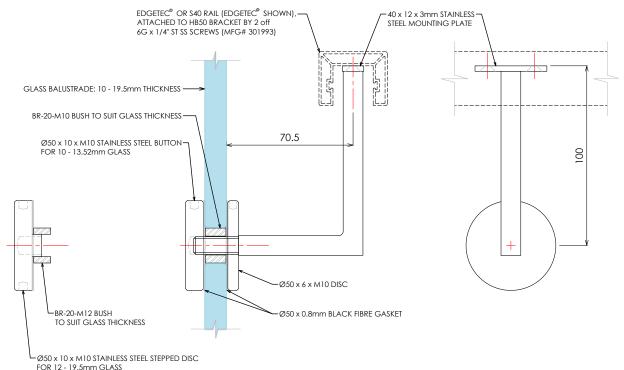
HB50-R-90 HANDRAIL BRACKET

Hb50 Rail Brackets



HB50-S-90 HANDRAIL BRACKET

All fixings to be stainless steel







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PLATEFIX PF150 BALUSTRADE SYSTEM

Installation / Fitting Instructions

SIDE FIX (PF150) – Platefix



Product	Installation/Fitting Instructions
Structure Fastening Installation Typical Layout of PF150 Platefix Anchors.	 Verify the deck capacity can withstand the loads required for installation prior to fixing balustrade. Using laser level or string line, cast level lines horizontally and vertically to find the centre points of the fastenings required for the building structure as detailed in the PS1. For double fixing minimum edge distance from top of structure to centre line of fixing is 50mm for concrete and 40mm for steel / timber. For single fixing minimum edge distance from top of structure to centre line of fixing is 85mm for concrete and 75mm for steel. Fixing layout centres are calculated as: minimum 100mm, maximum 200mm in from glass edges; Equal spacing's between corner fixings to match PS1 design tables.
Backing Plate Installation	• Install fastenings as per the given PS1 for structure type.
Structural fastening into backing Disc Tolerance.	 Fix PF150 backing plate to the fastening. (Tightening will vary by substrate type). – Ensure the backing discs are all on a level plane. If the building structure is not level:
	 For PF150 Platefix Anchor - add fibre gaskets (3 gaskets max.) or additional custom plates to a maximum of 100mm.
	Ensure that the fastenings in the building structure are flush to the face of the backing disc. Any protrusion over the face side will cause damage to the glass surface.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.



PLATEFIX PF150 BALUSTRADE SYSTEM

Installation / Fitting Instructions

Product	Installation/Fitting Instructions
Glass Installation	 NOTE: when ordering glass ensure the hole diameters are 26mm. Check that the hole locations in the glass panels align with the backing disc fastening locations. Install glass panels. For PF150 Platefix Anchor – use black fibre gasket to backing disc surface, suitable bush for tolerance (thickness to suit the glass t), black fibre gasket to outer disc and M12 fastening (single fix) or M10 fastening for (double fixing) (length to suit the glass t). Fix the PF150 Platefix front plate through the glass panel to the backing plate, tightening to 40Nm. M12 / M10 fastening must not clash with building structure fastening inside the backing disc. 1. Check Glass panel gaps, levels and alignments of frit or similar pattern details. Align with setting blocks and/ or spacers to suit. 2. Check PF150 Platefix anchors have been torqued to 40Nm.
Cleaning	Once everything is correctly in place and the job is complete, the glass and disc need to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the PF150 Platefix anchor. We also recommend a soft sponge or cloth,
	again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.



Strut Post System PL200/PL400 (Base and Side Fix)

The Strut Post system has a patented adjustable clamping system, designed for 12mm thick toughened glass without holes. The system is designed for heights up to 1200mm for balustrades. Available in base or side fix configuration, Strut Posts have crafted covers which hide the engineered stainless steel fixings. Manufactured from extruded architectural grade aluminium, Strut Posts are a popular choice for their modern, minimalist finish.

- ENGINEERED Modern design for waterproof or floating decks, are accommodated with a specially designed gutter bracket for Strut Post brackets.
- CUSTOM COLOURED with an extensive choice of powder coat finishes available. The architectural grade aluminium can be tailored to requirements.

1



Key Features

- The Strut Post PL200 and PL400 can be base fixed (top) or side fixed (face) mounted.
- Adjustable for glass alignment (No glass holes).
- Concealed fixings.
- Four Hole mounting plates for Timber (Standard), Two Hole mounting plates for Concrete / Steel (Upon Request).

Material Finish

- Available in standard silver frost finish. Special colours on request.
- Powder coated upon request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.
- > All fixings must be Stainless Steel.

Occupancy Type

- Suitable for occupancy types A, A Other, B and E.
- Occupancy Types as per AS/NZ 1170.1.2002.

Windzone

- Exceeds the wind loading for all Wind Zones up to and including High Wind Zone as set out in NZS 3604:2011.
- Max design Wind pressure subject to glass type and fixing method.

The system is glazed with Metro Performance Glass, as follows:

- TEMPAFLOAT® 12mm nominal thickness, monolithic toughened safety glass (TSG) with interlinking rail.
- Glass must have a minimum strength of 100MPa. All edges polished.

Interlinking Rail

All monolithic toughened frameless glass balustrades must have an Interlinking Rail to conform to NZS 4223.3.2016, including the latest amendment of NZBC B1.

Compliance

Complies with AS/NZS 1170:2002, NZS 4223.3.2016, NZ Building Code B1, F2, F4 and F9.

Scope of Use

- Suitable for balustrades, pool fences and wind breaks. It is a cost effective way to enhance a deck, pool or stairway
- An interlinking top rail finishes off the system, producing a low profile modern look.

Support Inquiries

 Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



STRUT POST PL200 BALUSTRADE SYSTEM



Base Fix (Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
PL200 STRUT POST (BASE FIX) *Adjustable for glass alignment,	301163	Suits 12mm Glass	SILVER FROST	ALUM	STRUT POST	BALUSTRADE SYSTEM	Internal & External
	301848	Suits 12mm Glass	MILL FINISH			(BASE FIX)	
Concealed Fixings.			ON REQUEST: POWDERCOAT PSS				- M M M

Base Fix Individual Components – Fixings: Screws

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
CSK SLEEVE ANCHOR	500644	M10 x 120mm	SS	STAINLESS STEEL	CSK SLEEVE ANCHOR	FIXING COMPONENT FOR MASONRY / CONCRETE	Internal 8 External
CSK COACH SCREW	301226 301281	M10 x 120mm M10 x 100mm	SS SS	STAINLESS STEEL	CSK COACH SCREW	FIXING COMPONENT FOR TIMBER	Internal 8 External
CSK MACHINE SCREW	301256	M10 x 30mm	SS	STAINLESS STEEL	CSK MACHINE SCREW	FIXING COMPONENT FOR STEEL	Internal 8 External
GUTTER BRACKET	301969 301970	120Wx135Hmm 120Wx135Hmm (4 Hole)	SILVER FROST MILL FINISH	STAINLESS STEEL		GUTTER BRACKET *Order on request	Internal 8 External





STRUT POST PL400 BALUSTRADE SYSTEM

Side Fix (Domestic and Commercial Applications)

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
PL400 STRUT POST	301164	Suits 12mm Glass	SILVER FROST	ALUM	STRUT POST	BALUSTRADE SYSTEM	Internal & External
(SIDE FIX) *Adjustable for glass alignment,	301852	Suits 12mm Glass	MILL FINISH			(FACE FIX)	
Concealed Fixings.			ON REQUEST: POWDERCOAT PSS				JU ₩

Side Fix Individual Components – Fixings: Screws

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
PL400 STRUT	500247	M10 x 130mm	SS	STAINLESS	THREADED	FIXING	Internal &
POST SOCKET SCREW		Washer 30x10.5x2mm		STEEL	ROD / WASHER / HEX NUT	COMPONENT FOR MASONRY / CONCRETE	External
00		M10 Hex Nut					± E S P P
COACH SCREW /	500324		FIXING	Internal &			
WASHER 0		Washer 19.5x10.5x 2mm		STEEL	SCREW / WASHER	COMPONENT FOR TIMBER	External
CSK MACHINE	301256	M10 x 30mm	SS	STAINLESS	CSK MACHINE	FIXING	Internal &
SCREW				STEEL	SCREW	COMPONENT FOR STEEL	External မြန်မာ ကို





BALUSTRADE SYSTEM COMPONENTS



Balustrade Stiffener Brackets (For Aligning and Stiffening Panels)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
90 DEGREE STIFFENER BRACKET (GLASS TO WALL)	300153	65x55x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STEEL	STIFFENER BRACKET	FIXING COMPONENT	Internal & External
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90 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300151	75x50x25mm GLASS THICKNESS: 12-15.5mm	SS	2205 STAINLESS STIFFENER FIXING STEEL BRACKET COMPONENT			Internal & External
s							ျ ို ကြူ
180 DEGREE STIFFENER BRACKET (GLASS TO GLASS)	300149	70x25mm GLASS THICKNESS: 12-15.5mm	S SS STEEL BRACKET COMPO		FIXING COMPONENT	Internal & External	
36							JU

NOTE: All brackets are supplied with a selection of gaskets to suit glass thickness.



S25 Link Rail



- 25 x 21mm 2205 Stainless Steel.
- Suitable for 12mm Glass Thickness with this system.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel finish standard, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL	300738	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 12mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
P		OVERALL SIZE: 25 x 21mm					E
S25 LINK RAIL	300118	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External
S25 LINK RAIL	301854	Suits S25 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External





S25 Link Rail



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL	300863	Suits S25 Rail	SS	2205 STAINLESS	ADJUSTABLE	BALUSTRADE	Internal &
VERTICAL ADJUSTABLE JOINER			ON REQUEST: POWDERCOAT	STEEL	JOINER	LINK RAIL COMPONENT	External
S25 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300862	Suits S25 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal & External
17							
S25 LINK RAIL FIXED 90 DEGREE	300861	Suits S25 Rail	SS	2205 STAINLESS	90 DEGREE	BALUSTRADE	Internal &
CORNER			ON REQUEST: POWDERCOAT	STEEL	CORNER CONNECTOR	LINK RAIL COMPONENT	External
S25 LINK RAIL	300864	Suits S25 Rail	SS	2205 STAINLESS	INLINE JOINER	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
S25 END CAP	300512	Suits S25 Rail	SS	2205 STAINLESS	END CAP	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
LINK RAIL	300961	Suits S25 Rail	ADHESIVE	50ML BOTTLE	TUBE LOCK	BALUSTRADE	Internal &
LOCTITE 243					ADHESIVE	LINK RAIL COMPONENT	External
S25 LINK RAIL	302091	Suits S25 Rail	BLACK	RUBBER	RUBBER		Internal &
RUBBER GASKET		PER METRE LENGTH GLASS THICKNESS: 12mm			GASKET FOR S25 LINK RAIL	LINK RAIL COMPONENT	External
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS	GRUB SCREW	BALUSTRADE	Internal &
(STEEL		LINK RAIL FIXING	External



S40 Link Rail



- 40 x 30mm 2205 Stainless Steel.
- Suitable for 12mm Glass Thickness with this system.
- Rubber gasket available to suit respective glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin Stainless Steel standard finish, can be Powdercoated upon request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	300739	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		GLASS THICKNESS: 12mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
		OVERALL SIZE: 40 x 30mm					
S40 LINK RAIL	300156	Suits S40 Rail	SS	2205 STAINLESS STEEL	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)			ON REQUEST: POWDERCOAT		BRACKET	LINK RAIL COMPONENT	External
S40 LINK RAIL	301855	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	



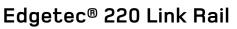


S40 Link Rail



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL VERTICAL ADJUSTABLE JOINER	300868	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE VERTICAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S40 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	300867	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	ADJUSTABLE HORIZONTAL JOINER	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S40 LINK RAIL FIXED 90 DEGREE CORNER	300866	Suits S40 Rail	SS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	90 DEGREE CORNER CONNECTOR	BALUSTRADE LINK RAIL COMPONENT	Internal 8 External
S40 LINK RAIL	300869	Suits S40 Rail	SS	2205 STAINLESS	INLINE JOINER	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
S40 END CAP	300513	Suits S40 Rail	SS	2205 STAINLESS	END CAP	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
	300961	Suits S40 Rail	ADHESIVE	50MM BOTTLE	TUBE LOCK	BALUSTRADE	Internal &
					ADHESIVE	LINK RAIL COMPONENT	External
S40 LINK RAIL	302092	Suits S40 Rail	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal & External
RUBBER GASKET		PER METRE LENGTH GLASS THICKNESS: 12mm			GASKET FOR S40 LINK RAIL	LINK RAIL COMPONENT	
GRUB SCREW	301978	M5x6mm	SS	316 STAINLESS	GRUB SCREW	BALUSTRADE	Internal &
(STEEL		LINK RAIL FIXING	External







Aluminium LinkRail 38x30mm - For 12mm Glass

- 38 x 30mm Aluminium Link Rail.
- Available in Natural Anodisied Finish 20 microns as standard or Silver Frost powdercoat. Special colours on request (Powdercoating or Anodising).
- Rubber gasket available to suit 12mm glass thicknesses with this system.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.

Compliance

www.metroglass.co.nz

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.







Edgetec[®] 220 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	300728	5800mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL	300729	5800mm	SILVER FROST			LINK RAIL	External
FULL LENGTH	300727	5800mm	MILL FINISH				
		GLASS THICKNESS: 12mm OVERALL	ON REQUEST: POWDERCOAT				
		SIZE: 38 x 30mm					
EDGETEC® 220	300725	2900mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL HALF LENGTH	300726	2900mm	SILVER FROST			LINK RAIL	External
	300724	2900mm	MILL FINISH				
		(Half Length) GLASS THICKNESS: 12mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	300593	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
LINK RAIL RUBBER GASKET		GLASS THICKNESS: 12mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300847	80x22.8x5mm	MILL	ALUM 6063	180 DEGREE	BALUSTRADE	Internal &
					STRAIGHT JOINER	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300848	50x50x5mm	MILL	ALUM 6063	90 DEGREE	BALUSTRADE	Internal &
LINK RAIL 90 DEGREE JOINER					CORNER JOINER	LINK RAIL COMPONENT	External
EDGETEC® 220	300493	38.4 x 30.4mm	ANOD – Natural	ALUM 6063	END CAP	BALUSTRADE	Internal &
END CAP	300494	38.4 x 30.4mm	SILVER FROST			LINK RAIL COMPONENT	External
	300492	38.4 x 30.4mm	MILL				
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT				يني ا
EDGETEC [®] 220 LINK RAIL FIXED 90 DEGREE	301985	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	90 DEGREE CORNER	BALUSTRADE LINK RAIL	Internal & External
CORNER	301986	Suits Edgetec® 220 Rail	MILL		CONNECTOR	COMPONENT	
A		(Component)	ON REQUEST: POWDERCOAT				



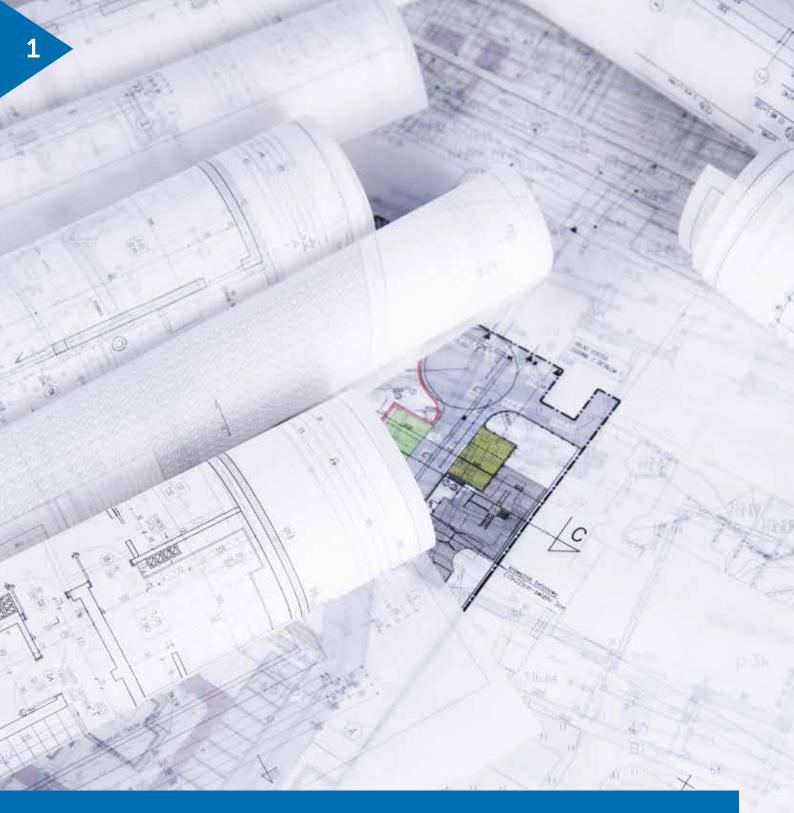
Edgetec[®] 220 Link Rail

EDGETEC® 220 LINK RAIL HORIZONTAL	Model 301987 301988	Sizes mm Suits Edgetec® 220 Rail	Finish SILVER FROST	Material	Туре	Application	Area
LINK RAIL HORIZONTAL ADJUSTABLE		220 Bail		ALUM 6063	ADJUSTABLE	BALUSTRADE	Internal &
JOINER	201200	Suits Edgetec® 220 Rail	MILL		HORIZONTAL JOINER	LINK RAIL COMPONENT	External
-		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220	301989	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	ADJUSTABLE VERTICAL	BALUSTRADE LINK RAIL	Internal & External
VERTICAL	301990	Suits Edgetec® 220 Rail	MILL		JOINER	COMPONENT	
		(Component)	ON REQUEST: POWDERCOAT				
LDGLILO LLO	301003	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)	301004	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEO ELO	301005	120 x 45mm	SILVER FROST	ALUM 6063		BALUSTRADE	Internal &
(RIGHT HAND)	301006	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	∎ ∰
	301002	100 x 65mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET	301149	100 x 65mm	MILL	-	BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEO EEO	301991	60 x 46mm	SILVER FROST	ALUM 6063	POST END	BALUSTRADE	Internal &
PUSTEND MOUNT^	301992	60 x 46mm	MILL		MOUNT FOR AP65	LINK RAIL COMPONENT	External
*Suits AP65 Series Aluminium Post		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
SCREW	301993	6G x 1/4" Sq	SS	304 STAINLESS	SCREW	PAN HEAD SCREW	Internal &
		GLASS THICKNESS:		STEEL		SUITS	External
		12mm, 15mm				300847 300848	
Guummunas-						301985 301986 301003 301004 301005 301006 301002 301149 301991 301991	
	300011	V60	ADHESIVE	CARTRIDGE	SILICONE	FIXING	Internal &
						COMPONENT	









Design Tables

Design tables for this balustrade system are currently in development, and will be added once complete.

For information regarding glass types and typical fixing spacings for a given design wind pressure, please contact Metro Technical team - (09) 927 3000 technical@metroglass.co.nz

Installation / Fitting Instructions

(PL200 & PL400) Strut Post

Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel
Installation of the Strut Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types
Elevations showing main features	PL200 Base Fix Strut Post Refer Page 233.
	Notes:
	1. Clamp panels, 3mm SS and Gasket material. Held in place with Double sided tape
	 Glass Clamping - Tighten bottom grubscrew first, then two top screws. Do not over tighten, max torque 5Nm.
	3. MP Cover Panels. Held in place with Double sided tape
	4. Use top grub screw for vertical alignment of the glass panel.
	5. Ensure that the glass panel is not in contact with any of the Strut post
	6. For height adjustment pack the bottom of the glass with additional bottom gaskets as required.
Elevations showing main features	PL200 Base Fix with Gutter Bracket Strut Post Refer Page 234.
	Notes:
	1. Clamp panels, 3mm SS and Gasket material. Held in place with Double sided tape
	 Glass Clamping - Tighten bottom grubscrew first, then two top screws. Do not over tighten, max torque 5Nm.
	3. MP Cover Panels. Held in place with Double sided tape.
	4. Use top grub screw for vertical alignment of the glass panel.
	5. Ensure that the glass panel is not in contact with any of the Strut Post
	6. For height adjustment pack the bottom of the glass with additional bottom gaskets as required.



STRUT POST PL200/PL400 BALUSTRADE SYSTEM

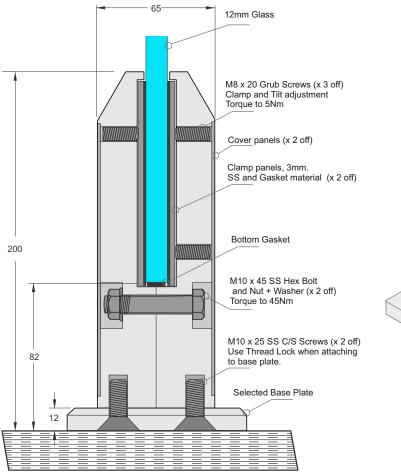
Installation / Fitting Instructions

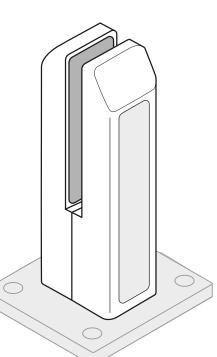
Product	Installation/Fitting Instructions
Elevations showing the main features	PL400 Side Fix Strut Post. Refer Page 235.
	Notes:
	1. Clamp panels, 3mm SS and Gasket material. Held in place with Double sided tape
	 Glass Clamping - Tighten bottom grubscrew first, then two top screws. Do not over tighten, max torque 5Nm.
	3. MP Cover Panels. Held in place with Double sided tape
	4. Use top grub screw for vertical alignment of the glass panel.
	5. Ensure that the glass panel is not in contact with any of the Strut post
	6. For height adjustment pack the bottom of the glass with additional bottom gaskets as required.
Cleaning	Once everything is correctly in place and the job is complete, the glass and disc need to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the PL200/PL400 Strut Post. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.



Installation / Fitting Instructions

BASE FIX (PL200) Strut Post





NOTES:

- 1 Clamp panels, 3mm SS and Gasket material. Held in place with double sided tape.
- 2 Glass Clamping Tighten bottom grubscrew first, then two top screws. Do not over tighten, max torque 5Nm.
- 3 MP Cover Panels. Held in place with double sided tape.
- 4 Use top grub screw for vertical alignment of the glass panel.
- 5 Ensure that the glass panel is not in contact with any of the Strut Post.
- 6 For height adjustment pack the bottom of the glass with additional bottom gaskets as required.

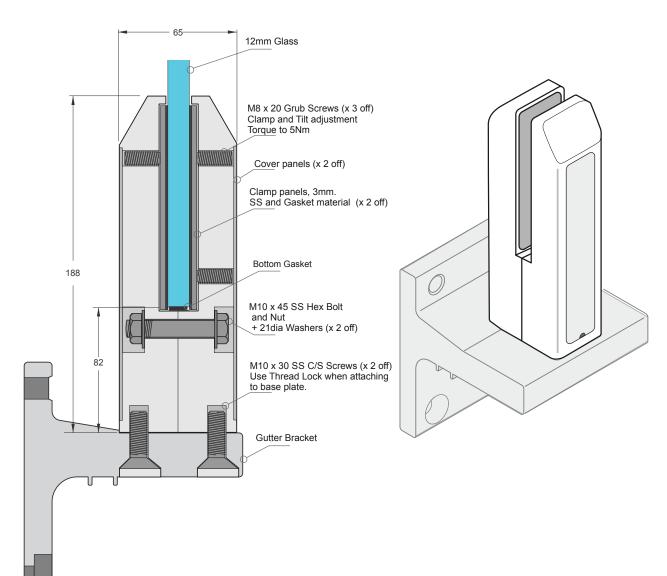
Important note: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the PS1.



STRUT POST PL200 BALUSTRADE SYSTEM

Installation / Fitting Instructions

BASE FIX TO GUTTER BRACKET (PL200) Strut Post

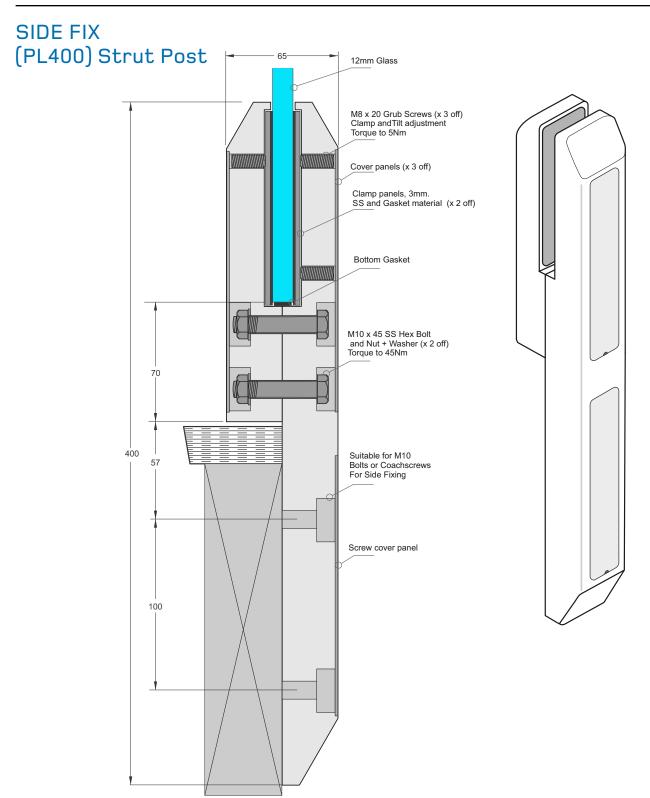


NOTES:

- 1 Clamp panels, 3mm SS and Gasket material. Held in place with double sided tape.
- 2 Glass Clamping Tighten bottom grubscrew first, then two top screws. Do not over tighten, max torque 5Nm.
- 3 MP Cover Panels. Held in place with double sided tape.
- 4 Use top grub screw for vertical alignment of the glass panel.
- 5 Ensure that the glass panel is not in contact with any of the Strut Post.
- 6 For height adjustment pack the bottom of the glass with additional bottom gaskets as required.

STRUT POST PL400 BALUSTRADE SYSTEM

Installation / Fitting Instructions



PL200/PL400 STRUT POST SYSTEN

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NOTES:

- 1 Clamp panels, 3mm SS and Gasket material. Held in place with double sided tape.
- 2 Glass Clamping Tighten bottom grubscrew first, then two top screws. Do not over tighten, max torque 5Nm.
- 3 MP Cover Panels. Held in place with double sided tape.
- 4 Use top grub screw for vertical alignment of the glass panel.
- 5 Ensure that the glass panel is not in contact with any of the Strut Post.
- 6 For height adjustment pack the bottom of the glass with additional bottom gaskets as required.





Semi Frameless Aluminium Posts AP65/AP78 (Base and Side Fix)

The semi frameless balustrade system is a dependable, low maintenance, aluminium and glass barrier system, which is sought-after for decks, wind breaks and pool fencing. The semi frameless system can incorporate either toughened glass in a range of styles including fully framed or semi frameless glass balustrade finishes. Further options include the addition of an intermediate rail for a split rail finish.

Metro's Semi Frameless balustrade has been designed to fit most building scenarios including installation on modern floating or waterproof decks.

- ENGINEERED Modern design for waterproof or floating decks, are accommodated with a specially designed gutter bracket for post balustrades.
- CUSTOM COLOURED with an extensive choice of powder coat finishes available. The architectural grade aluminium can be tailored to requirements.

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Key Features

- Concealed face fixings.
- Custom made to suit most applications.
- Five standard rail options.
- Suitable for installation on waterproof or floating decks (with Gutter Bracket).

Material Finish

- Available in standard silver frost finish. Special colours on request.
- Powder coated upon request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.
- Important instructions Attachment to structures;
 - An EPDM or similar material spacer must be used to separate all aluminium items from all timber, concrete and steel structures. Failure to do so can lead to the chemicals in the structure affecting the surface finish on the aluminium.
- All fixings must be Stainless Steel.

Occupancy Type

- AP65 is suitable for occupancy types A, A and Other only. Not suitable for non Domestic and Commercial applications.
- AP78 is suitable for occupancy types A, B, E, C, C1, C2, C3 and D (not C5).

Windzone

- AP65 exceeds the wind loading for all Wind Zones up to and including Extra High Wind Zone as set out in NZS 3604:2011. Subject to post spacing and fixing method.
- AP78 exceeds the wind loading for all Wind Zones up to and including Extra High Wind Zone as set out in NZS 3604:2011. Subject to post spacing and fixing method.

The system is glazed with Metro Performance Glass, as follows:

AP65 Aluminium Post

- TEMPAFLOAT® 10mm nominal thickness, monolithic toughened safety glass (TSG) with interlinking rail.
- SAFELITE® EVA 13.2mm nominal thickness toughened laminated safety glass (TLSG). Interlinking rail not required.

AP78 Aluminium Post

 TEMPAFLOAT® 12-15mm nominal thickness, monolithic toughened safety glass (TSG) with interlinking rail.

Interlinking Rail

- All monolithic toughened frameless glass balustrades must have an Interlinking Rail to conform to NZS 4223.3.2016, including the latest amendment of NZBC B1.
- Semi Frameless glass balustrades include a handrail which are either top or front mounted. The top rail is fashioned from one of five styles of handrails - round, rectangular, slimline interlinking rail, aerofoil or double aerofoil, all finished in a powder coat colour matching the posts.
- Front mounted interlinking rails are fitted to a bracket, which fixes to the balustrade post face, 100mm below the top edge.

Compliance

Complies with AS/NZS 1170:2002, NZS 4223.3.2016, NZ Building Code B1, F2, F4 and F9.

Scope of Use

Suitable for Decks, Stairways, Balconies, Pool Surrounds, Boundary Fences, Pool Gates, Stairway Gates. It is a cost effective way to enhance a deck, pool or stairway.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



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SEMI FRAMELESS ALUMINIUM POST



Base Fix – Full Height (Residential Applications)

Up to 1200mm long post up to 1200mm high pool fence for 10mm toughened glass.

Full Height Glass Option can accommodate Frameless Post Top Caps (View Handrail Section for further details)

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
110ddee	Wieder	01203 11111	INTERMEDIA			Application	Area
AP65 ALUMINIUM	500063	1000mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
INTERMEDIATE	500292	1000mm (H)	MILL FINISH	ALOIM	POST	SYSTEM	External
POST (BASE FIX)	500067	1200mm (H)	SILVER FROST			(BASE FIX)	
· · · ·	500300	1200mm (H)	MILL FINISH			*Base plate and	<u>ය</u> ්ට
		SETUP FOR	ON REQUEST:			top cap to be specified, not	<u>اللہ</u>
		GLASS THICKNESS OF 10mm	POWDERCOAT			included in kit	P
45.0		65 x 45mm					
POST EXTRUSION			END P	OST			
AP65 ALUMINIUM	500062	1000mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
END POST (BASE FIX)	500299	1000mm (H)	MILL FINISH		POST	SYSTEM	External
	500066	1200mm (H)	SILVER FROST			(BASE FIX)	
	500301	1200mm (H)	MILL FINISH			*Base plate and	i ط
45.0		SETUP FOR GLASS THICKNESS OF 10mm	ON REQUEST: POWDERCOAT			top cap to be specified, not included in kit	JU B
650 POST EXTRUSION		65 x 45mm					
			CORNER	POST		1	
AP65 ALUMINIUM	500070	1000mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
CORNER POST (BASE FIX)	500298	1000mm (H)	MILL FINISH		POST	SYSTEM	External
	500072	1200mm (H)	SILVER FROST			(BASE FIX)	
	500302	1200mm (H)	MILL FINISH			*Base plate and	డోపె
		SETUP FOR GLASS THICKNESS OF 10mm	ON REQUEST: POWDERCOAT			top cap to be specified, not included in kit	ျှင် ရှိ
		65 x 65mm					

NOTE: Kits above are set up for 10mm glass, if specifying 13.2mm SAFELITE® EVA please advise at the time of order placement.



AP65 ALUMINIUM BALUSTRADE POST SYSTEM

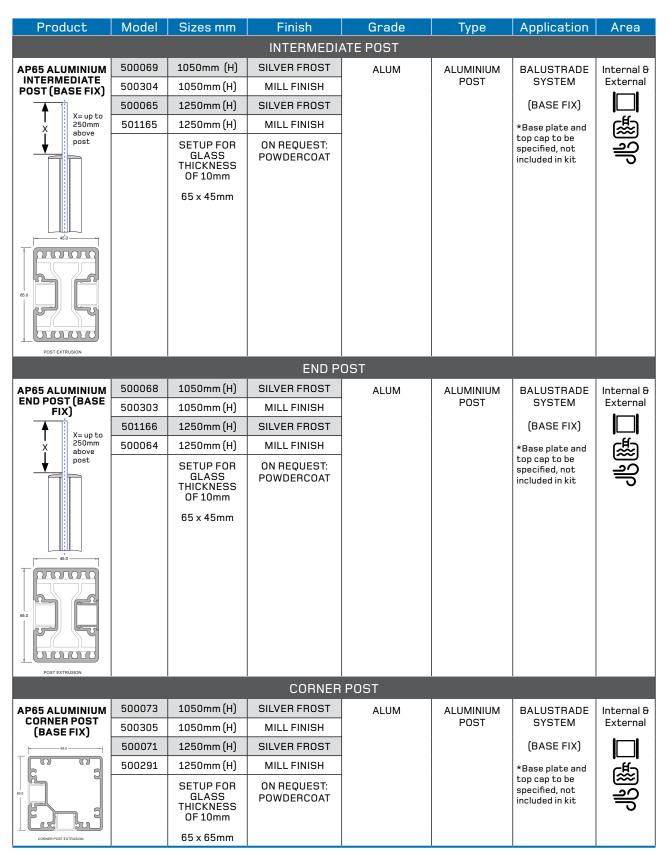


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Base Fix - Low Height (Residential Applications)

Up to 1000mm long post up to 1250mm high pool fence for 10mm toughened glass.

Low Height Glass Option can accommodate a Link Rail (View Handrail Section for further details)



NOTE: Kits above are set up for 10mm glass, if specifying 13.2mm SAFELITE® EVA please advise at the time of order placement.

AP65 ALUMINIUM BALUSTRADE POST SYSTEM

10 YEAR HARDWARE WARRANTY

Side Fix - Full Height (Residential Applications)

▶ Up to 1400mm long post up to 1200mm high pool fence for 10mm toughened glass.

> Full Height Glass Option can accommodate Frameless Post Top Caps (View Handrail Section for further details)

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
			INTERMEDIA	ATE POST			
AP65 ALUMINIUM	500057	1000mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
INTERMEDIATE POST	500309	1000mm (H)	MILL FINISH		POST	SYSTEM	External
(SIDE FIX)	500061	1200mm (H)	SILVER FROST			(SIDE FIX)	
· ·	500311	1200mm (H)	MILL FINISH				l
		SETUP FOR GLASS THICKNESS OF 10mm 65 x 45mm	ON REQUEST: POWDERCOAT				ရှိန
650 POST EXTRUSION							
			END P	OST			
AP65 ALUMINIUM	500056	1000mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
END POST (SIDE FIX)	500308	1000mm (H)	MILL FINISH		POST	SYSTEM	External
	500060	1200mm (H)	SILVER FROST			(SIDE FIX)	
	500310	1200mm (H)	MILL FINISH				<u>بت</u>
		SETUP FOR GLASS THICKNESS OF 10mm	ON REQUEST: POWDERCOAT				ရှိ
45.0		65 x 45mm					
650 DOTEXTRUSION							

NOTE: Kits above are set up for 10mm glass, if specifying 13.2mm SAFELITE® EVA please advise at the time of order placement.



AP65 ALUMINIUM BALUSTRADE POST SYSTEM



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Side Fix – Low Height (Residential Applications)

▶ Up to 1200mm long post up to 1250mm high pool fence for 10mm toughened glass.

Low Height Glass Option can accommodate a Link Rail (View Handrail Section for further details)

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
			INTERMEDI	ATE POST			
AP65 ALUMINIUM INTERMEDIATE POST (SIDE FIX)	500055 500307 500059	1050mm (H) 1050mm (H) 1250mm (H)	SILVER FROST MILL FINISH SILVER FROST	ALUM	ALUMINIUM POST	BALUSTRADE SYSTEM (SIDE FIX)	Internal & External
X=upto 250mm above post	501167	1250mm (H) SETUP FOR GLASS THICKNESS OF 10mm 65 x 45mm	MILL FINISH ON REQUEST: POWDERCOAT				JU B
6.0 POSTEXTRUSION							
	500054	4050 (11)	END P				
AP65 ALUMINIUM END POST	500054 501168	1050mm (H) 1050mm (H)	SILVER FROST MILL FINISH	ALUM	ALUMINIUM POST	BALUSTRADE SYSTEM	Internal & External
(SIDE FIX)	500058	1250mm (H)	SILVER FROST			(SIDE FIX)	
X= up to	501169	1250mm (H)	MILL FINISH				
250mm above post		SETUP FOR GLASS THICKNESS OF 10mm 65 x 45mm	ON REQUEST: POWDERCOAT				ျှင် ကြ
6.0 POST EXTRUSION							

NOTE: Kits above are set up for 10mm glass, if specifying 13.2mm SAFELITE® EVA please advise at the time of order placement.





SEMI FRAMELESS POST COMPONENTS





Product	Model	Sizes mm	Finish	Grade	Tupo	Application	Area
BASE PLATE	300064	110x90x12mm	SILVER FROST		Type FOR BASE FIX		
TYPE1	300063	110x90x12mm	MILL FINISH	ALUM	ALUMINIUM	BALUSTRADE COMPONENT	Internal & External
		(4 Hole)			POSTS	OSTS	
e e							
) ရာ
	300060	110x100x12mm	SILVER FROST				
BASE PLATE TYPE 2	300059	110x100x12mm	MILL FINISH	ALUM	FOR BASE FIX ALUMINIUM	BALUSTRADE COMPONENT	Internal & External
		(4 Hole)			POSTS		
							<u>ද</u> ්දු
· - 111 · ·							
BASE PLATE	300062	110x90x12mm	SILVER FROST	ALUM	FOR BASE FIX	BALUSTRADE	Internal &
TYPE 3 *For Steel Beams or	300061	110x90x12mm	MILL FINISH		ALUMINIUM COMPONENT POSTS (STEEL BEAM OR	External	
Concrete Only		(2 Hole)					
- ****						EAM OR NCRETE)	ا بی
					CONCHETEJ		າ
							P
GLASS SUPPORT BRACKET	300124	17x13x32mm	BLACK	PLASTIC	BRACKET	BALUSTRADE	Internal &
BRACKET	301211	17x13x32mm	BLACK			COMPONENT	External
		Long Bracket Screws*					
and the second s		*x2 Screws					
100		required per support bracket				ے ا	
		No8 x 16 SS PK Screws					5
GLAZING WEDGE	301843	3mm	BLACK	RUBBER/PVC	GLAZING	BALUSTRADE	Internal &
					WEDGE	COMPONENT	External
							(ස ්ට
GLAZING D SEAL	301844	8Dx9.5mmW	BLACK	RUBBER/PVC	GLAZING D	BALUSTRADE	Internal &
					SEAL	COMPONENT	External
							۲. E
							٦٢
TOP CAP FULL	301560	66 x 46mm	SILVER FROST	ALUM	TOP CAP	BALUSTRADE	Internal &
HEIGHT POST	301559	66 x 46mm	MILL FINISH			COMPONENT	External
		(Component)					
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NOTE: Base Plates need to be ordered in addition to Top mounted posts for Base Fix applications.



SEMI FRAMELESS POST COMPONENTS

Base Plates, Glass Support Bracket, Aluminium Spacers, Gutter Brackets

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
TOP CAP	301562	66 x 46mm	SILVER FROST	ALUM	ТОР САР	BALUSTRADE	Internal &
INTERMEDIATE POSTS LOW	301561	66 x 46mm	MILL FINISH			COMPONENT	External
HEIGHT *Double Pocket		*Fits over					
*Double Pocket		intermediate post					<u>ب</u>
							 ງ
							٦
TOP CAP END	301564	66 x 46mm	SILVER FROST	ALUM	TOP CAP	BALUSTRADE	Internal &
POSTS LOW HEIGHT	301563	66 x 46mm	MILL FINISH			COMPONENT	External
*Single Pocket		*Fits over end post RH / LH					
		Symetrical					بلک
							l i
TOP CAP CORNER	301543	66 x 66mm	SILVER FROST	ALUM	ТОР САР	BALUSTRADE	Internal &
POST FULL HEIGHT POST	301544	66 x 66mm	MILL FINISH			COMPONENT	External
incluint 001							
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TOP CAP CORNER POST LOW	301541	66 x 66mm	SILVER FROST	ALUM	TOP CAP	BALUSTRADE	Internal &
HEIGHT	301524	66 x 66mm	MILL FINISH			COMPONENT	External
- 6							
the states							(#)
1 1							ျှ
1 1							5
GUTTER BRACKET	300103	120 x 135mm	SILVER FROST	ALUM	BASE PLATE GUTTER	BALUSTRADE COMPONENT	Internal & External
*Supplied with 8 high tensile post	300104	120 x 135mm	MILL FINISH		BRACKET		
fixing screws		(4 Hole)	ON REQUEST: POWDERCOAT				
II S							يني ا
No. of Concession, Name							ျ
12 0							5
	301401	38(dia) x30mm	SILVER FROST	A 1 1 1 A			Internel C
ALUMINIUM SPACER FOR	301401	38(dia) x30mm	MILL FINISH	ALUM	ALUMINIUM POST SPACER	BALUSTRADE COMPONENT	Internal & External
FACE FIX ALUMINIUM	301399	38(dia) x10mm	SILVER FROST				
FRAMELESS POST	301333	38(dia) x10mm	MILL FINISH			(FACE FIX)	
	ON REQUEST: POWDERCOAT		۲۳				
-							ခ်
1							

NOTE: Base Plates need to be ordered in addition to Top mounted posts for Base Fix applications.





SEMI FRAMELESS FIXING COMPONENTS

Base and Side Fixings: Screws, Bolts, Threaded Rod, Glue, Anchor Fix

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
COACH SCREW / WASHER	500324	M10 x 160mm* (FACE FIX)	SS	316 STAINLESS STEEL	COACH SCREW/	FIXING COMPONENT	Internal & External
	500325	M10 x 180mm* (BASE FIX)	SS		WASHER	FOR TIMBER	
0		*20mm Diameter Washer included					မ္လား
HEX DYNABOLT	300525	100mm dia	SS	316 STAINLESS	DYNABOLT	FIXING	Internal &
ANCHOR		*Fits over end post RH / LH Symetrical		STEEL	ANCHOR	COMPONENT FOR CONCRETE	External
EPCON ANCHOR THREADED ROD	500260	M10 x 115mm (BASE FIX)	SS	316 STAINLESS STEEL	ROD / COM DOME NUT /	FIXING COMPONENT FOR CONCRETE	Internal & External
/ DOME NUT / WASHER	500261	M10 x 195mm (SIDE FIX)	SS				
đ—	500262	M12 x 120mmm (SIDE FIX)	SS				£ ∭ ¶
SIKA SUPERGRIP	300006	310ml	ADHESIVE	CARTRIDGE	SUPER BOND	FIXING	Internal &
2HOUR BOND						COMPONENT FOR TIMBER	
SIKA MASONRY	300004	300ml	ADHESIVE	CARTRIDGE	MASONRY	FIXING	Internal &
ANCHOR FIX		*Fits standard Cartridge Gun			ANCHOR FIX	COMPONENT	



Base Fix – Full Height (Residential Applications)

> Full Height Glass Option can accommodate Frameless Post Top Caps (View Handrail Section for further details)

		0	— •••••		-		
Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
			INTERMEDI	ATE POST	l		
AP78 ALUMINIUM INTERMEDIATE	500330	1800mm (H)	SILVER FROST	ALUM	ALUMINIUM POST	BALUSTRADE SYSTEM	Internal & External
POST	500331	1800mm (H)	MILL FINISH		FUST		
(BASE FIX)	500332	2200mm (H)	SILVER FROST			(BASE FIX)	
	500333	2200mm (H)	MILL FINISH			*Base plate and top cap to be	s and a second s
		SETUP FOR GLASS THICKNESS OF 12mm	ON REQUEST: POWDERCOAT			specified, not included in kit	ဂျီ
		78 x 54mm					
			END P	OST		1	
AP78 ALUMINIUM	500338	1800mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
END POST (BASE FIX)	500339	1800mm (H)	MILL FINISH		POST	SYSTEM	External
	500340	2200mm (H)	SILVER FROST			(BASE FIX)	
	500341	2200mm (H)	MILL FINISH			*Base plate and	ر ا لی روالی
		SETUP FOR GLASS THICKNESS OF 12mm	ON REQUEST: POWDERCOAT			top cap to be specified, not included in kit	ျိုး ကို
		78 x 54mm					
			CORNER	POST			
AP65 ALUMINIUM	500070	1000mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
CORNER POST (BASE FIX)	500298	1000mm (H)	MILL FINISH		POST	SYSTEM	External
65.0	500072	1200mm (H)	SILVER FROST			(BASE FIX)	
	500302	1200mm (H)	MILL FINISH			*Base plate and	ူ [∰]
		SETUP FOR GLASS THICKNESS OF 12mm	top cap to be specified, not included in kit	specified, not	၂ရို		
CORNER POST EXTRUSION		65 x 65mm					

NOTE: Kits above are set up for 12mm glass, if specifying 15mm TEMPAFLOAT® or 13.2mm SAFELITE® EVA please advise at the time of order placement.







Base Fix – Low Height (Residential Applications)

Low Height Glass Option can accommodate a Link Rail (View Handrail Section for further details)

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
			INTERMEDI				
AP78 ALUMINIUM	500326	1400mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal 8
INTERMEDIATE POST	500327	1400mm (H)	MILL FINISH		POST	SYSTEM	External
(BASE FIX)	500328	1600mm (H)	SILVER FROST			(BASE FIX)	
X= up to	500329	1600mm (H)	MILL FINISH			*Base plate and	بیلی
X 250mm above post		SETUP FOR GLASS THICKNESS OF 12mm 78 x 45mm	ON REQUEST: POWDERCOAT	•		top cap to be specified, not included in kit	ျှ
			END P	OST			
AP78 ALUMINIUM	500334	1400mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
END POST (BASE FIX)	500335	1400mm (H)	MILL FINISH		POST	SYSTEM	External
	500336	1600mm (H)	SILVER FROST			(BASE FIX)	
X = up to 250mm A above	500337	1600mm (H)	MILL FINISH			*Base plate and	t ال
		SETUP FOR GLASS THICKNESS OF 12mm 78 x 45mm	ON REQUEST: POWDERCOAT			top cap to be specified, not included in kit	၂ရို
			CORNER	POST			
AP65 ALUMINIUM	500073	1050mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
CORNER POST (BASE FIX)	500305	1050mm (H)	MILL FINISH		POST	SYSTEM	External
	500071 1	1250mm (H)	SILVER FROST			(BASE FIX)	
	500291	1250mm (H)	MILL FINISH			*Base plate and	
		SETUP FOR GLASS THICKNESS OF 12mm	ON REQUEST: POWDERCOAT			top cap to be specified, not included in kit	ျို
CORNER POST EXTRUSION		65 x 65mm					

NOTE: Kits above are set up for 12mm glass, if specifying 15mm TEMPAFLOAT® or 13.2mm SAFELITE® EVA please advise at the time of order placement.



Side Fix – Full Height (Residential Applications)

> Full Height Glass Option can accommodate Frameless Post Top Caps (View Handrail Section for further details)

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
			INTERMEDI	ATE POST			
AP78 ALUMINIUM	500346	1800mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
INTERMEDIATE POST	500347	1800mm (H)	MILL FINISH		POST	SYSTEM	External
(SIDE FIX)	500348	2200mm (H)	SILVER FROST			(SIDE FIX)	
	500349	2200mm (H)	MILL FINISH				<u>اللہ</u>
		SETUP FOR GLASS THICKNESS OF 12mm	ON REQUEST: POWDERCOAT				၂ရှိ
s		78 x 45mm					
			END P	OST			
AP78 ALUMINIUM	500354	1800mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
END POST (SIDE FIX)	500355	1800mm (H)	MILL FINISH		POST	SYSTEM	External
	500356	2200mm (H)	SILVER FROST			(SIDE FIX)	
	500357	2200mm (H)	MILL FINISH				
		SETUP FOR GLASS THICKNESS OF 12mm	ON REQUEST: POWDERCOAT				ျို
		78 x 45mm					

NOTE: Kits above are set up for 12mm glass, if specifying 15mm TEMPAFLOAT® or 13.2mm SAFELITE® EVA please advise at the time of order placement.



AP78 ALUMINIUM BALUSTRADE POST SYSTEM



Side Fix – Low Height (Residential Applications)

Low Height Glass Option can accommodate a Link Rail (View Handrail Section for further details)

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
			INTERMEDI	ATE POST			
AP78 ALUMINIUM	500342	1400mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
INTERMEDIATE POST	500343	1400mm (H)	MILL FINISH		POST	SYSTEM	External
(FACE FIX)	500344	1600mm (H)	SILVER FROST			(FACE FIX)	
X= up to	500345	1600mm (H)	MILL FINISH				چ چ
X 250mm above post		SETUP FOR GLASS THICKNESS OF 12mm 78 x 54mm	ON REQUEST: POWDERCOAT				ျက္ခ
			END P	OST			'
AP78 ALUMINIUM	500350	1400mm (H)	SILVER FROST	ALUM	ALUMINIUM	BALUSTRADE	Internal &
END POST (FACE FIX)	500351	1400mm (H)	MILL FINISH		POST	SYSTEM	External
	500352	1600mm (H)	SILVER FROST			(FACE FIX)	
X= up to 250mm	500353	1600mm (H)	MILL FINISH				
above post		SETUP FOR GLASS THICKNESS OF 12mm 78 x 54mm	ON REQUEST: POWDERCOAT				JU B

NOTE: Kits above are set up for 12mm glass, if specifying 15mm TEMPAFLOAT® please advise at the time of order placement.



SEMI FRAMELESS POSTS COMPONENTS

Base Plates, Glass Support Bracket, Aluminium Spacers, Gutter Brackets

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
BASE PLATE TYPE 5 *For Steel Beams or Concrete Only	300048	150x100x12mm	SILVER FROST	ALUM	FOR BASE FIX	BALUSTRADE COMPONENT	Internal & External
	300047	150x100x12mm	MILL FINISH		ALUMINIUM POSTS		
		(2 Hole)					
* 11-11 * ** p*							႕၆ ()
BASE PLATE	300050	150x125x12mm	SILVER FROST	ALUM	FOR BASE FIX ALUMINIUM POSTS	BALUSTRADE COMPONENT	Internal &
TYPE 6	300049	150x125x12mm	MILL FINISH				External
• • • •		(4 Hole)			F0515		JB B B B B B B B B B B B B B B B B B B
GLASS SUPPORT	300124	17x13x32mm	BLACK	PLASTIC	BRACKET	BALUSTRADE	Internal &
BRACKET	301211	17x13x32mm	BLACK		Brintenter	COMPONENT	External
1		Long Bracket Screws* *x2 Screws required per support bracket No8 x 16 SS PK Screws					ას∰_
GLAZING WEDGE	301843	3mm	BLACK	RUBBER/PVC	GLAZING	BALUSTRADE	Internal &
					WEDGE	COMPONENT	External
GLAZING D SEAL	301844	8Dx9.5mmW	BLACK	RUBBER/PVC	GLAZING	BALUSTRADE	Internal &
					D SEAL	COMPONENT	External Hill Hill Hill Hill Hill Hill Hill Hil
TOP CAP FULL HEIGHT POST	301556	78 x 54mm	SILVER FROST	ALUM	TOP CAP	BALUSTRADE COMPONENT	Internal &
	301555	78 x 54mm	MILL FINISH				External
		(Component)					J\$ ∭}

NOTE: Base Plates need to be ordered in addition to Top Mounted Posts for Base Fix applications.



SEMI FRAMELESS POSTS COMPONENTS

Base Plates, Glass Support Bracket, Aluminium Spacers, Gutter Brackets



Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
TOP CAP INTERMEDIATE POSTS LOW HEIGHT *Double Pocket	301554	78 x 54mm	SILVER FROST	ALUM	TOP CAP	BALUSTRADE COMPONENT	Internal & External
	301553	78 x 54mm	MILL FINISH				
		*Fits over intermediate post					
TOP CAP END	301558	78 x 54mm	SILVER FROST	ALUM	ТОР САР	BALUSTRADE	Internal &
POSTS LOW HEIGHT	301557	78 x 54mm	MILL FINISH	ALOW	TUP CAP	COMPONENT	External
*Single Pocket	301807	78 x 54mm	SILVER FROST				
	301806	78 x 54mm	MILL FINISH				
		*Fits over end post RH / LH Symetrical					
ALUMINIUM	301401	38(dia) x30mm	SILVER FROST	ALUM	ALUMINIUM POST SPACER	BALUSTRADE COMPONENT	Internal & External
SPACER FOR FACE FIX	301402	38(dia) x30mm	MILL FINISH				
ALUMINIUM FRAMELESS POST	301399	38(dia) x10mm	SILVER FROST			(FACE FIX)	
	301400	38(dia) x10mm	MILL FINISH				
			ON REQUEST: POWDERCOAT				

NOTE: Base Plates need to be ordered in addition to Top Mounted Posts for Base Fix applications.



SEMI FRAMELESS FIXING COMPONENTS

Face and Base Fixings: Screws, Bolts, Threaded Rod, Glue, Anchor Fix

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
COACH SCREW / WASHER	500324	M10 x 160mm* (FACE FIX)	SS	316 STAINLESS STEEL	COACH SCREW / WASHER	FIXING COMPONENT FOR TIMBER	Internal & External
	500325	M10 x 180mm* (BASE FIX)	SS				
0		*20mm Diameter Washer included					Jb ∰
HEX DYNABOLT	300525	100mm dia	SS	316 STAINLESS	DYNABOLT	FIXING	Internal &
ANCHOR		*Fits over end post RH / LH Symetrical		STEEL	ANCHOR	COMPONENT FOR CONCRETE	External
EPCON ANCHOR THREADED ROD	500260	M10 x 115mm (BASE FIX)	SS	316 STAINLESS STEEL	THREADED ROD /	FIXING COMPONENT FOR CONCRETE	Internal & External
/ DOME NUT / WASHER	500261	M10 x 195mm (SIDE FIX)	SS		DOME NUT / WASHER		
a	500262	M12 x 120mmm (SIDE FIX)	SS				ျပ
SIKA SUPERGRIP	300006	310ml	ADHESIVE	CARTRIDGE	SUPER BOND	FIXING	Internal &
2HOUR BOND						COMPONENT FOR TIMBER	
SIKA MASONRY	300004	300ml	ADHESIVE	CARTRIDGE	MASONRY	FIXING	Internal &
ANCHOR FIX		*Fits standard Cartridge Gun			ANCHOR FIX	COMPONENT	External



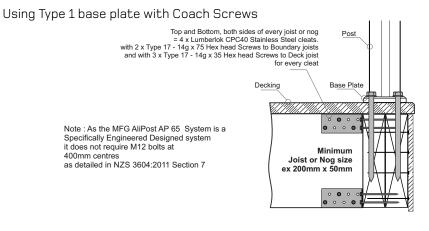


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AP65 ALUMINIUM BALUSTRADE POST SYSTEM

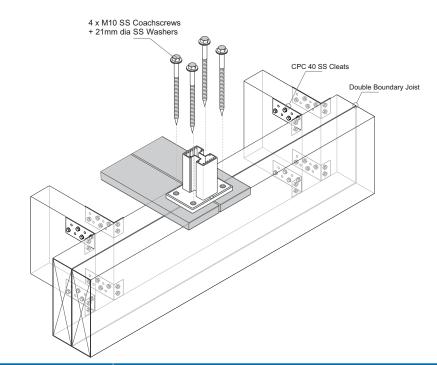
Installation / Fitting Instructions

Typical Base Fix Timber Fix



Important Installation notes:

- 1 The Designer must ensure the structure can support the appropriate horizontal and vertical loads
- 2 Coachscrews 150mm min engagement into joists
- 3 Bond all coachscrews with SIKA Supergrip to full depth
- 4 For all Boundary Joist Fixing details refer to the Joist Construction pages
- 5 All screw fixings must be Stainless steel



Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Base Fix Timber Fix Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

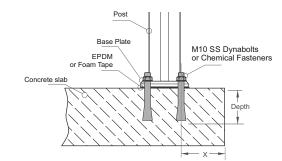
IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



Installation / Fitting Instructions

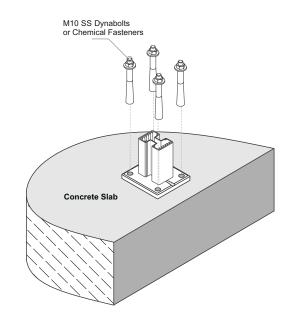
Typical Base Fix to Concrete

Using Type 2 base plate



Important Installation notes: 1 - A Design engineer must ensure the structure can support the appropriate loads 2 - All fixings must engage into the structural slab 3 - A Rubber, EPDM or Foam Tape layer must be installed between the Base plate and Concrete 4 - All fixings must be Stainless steel

Base Plate 110mm x 100mm, 4 hole	X (min)	Depth (min)
4 off M10 x 98 Hex Dynabolts, Stainless Steel. DP 12100SS	90mm	75mm
4 off M10 x 90 Chemset Anchors, Stainless Steel + Chemset capsule CS10130SS	35mm	90mm



Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Base Fix to Concrete Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

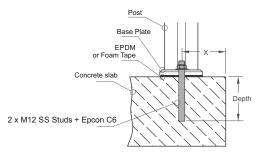
IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



Installation / Fitting Instructions

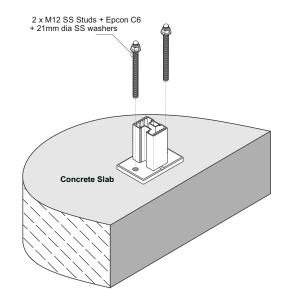
Typical Base Fix to Concrete

Using Type 3 base plate



- Important Installation notes: 1 A Design engineer must ensure the structure can support the appropriate loads
- 2 All fixings must engage into the structural slab 3 A Rubber, EPDM or Foam Tape layer must be installed between the Base plate and Concrete
- 3 A Rubber, EPDM or Foam Tape lay
 4 All fixings must be Stainless steel

ſ	Base Plate 120mm x 80mm	X (min)	Depth (min)
	2 off M12 SS Studs + Epcon C6	60mm	110mm



Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Base Fix to Concrete Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

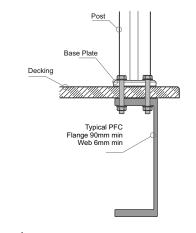
IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



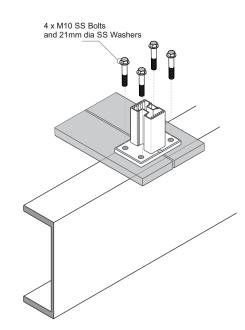
Installation / Fitting Instructions

Typical Base Fix to Steel

Using Type 1 base plate



Important Installation notes: 1 - A Design engineer must ensure the structure can support the appropriate load 2 - All fixings must be Stainless steel



Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Base Fix to Steel Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



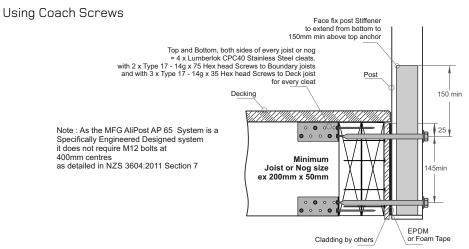
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AP65 ALUMINIUM BALUSTRADE POST SYSTEM

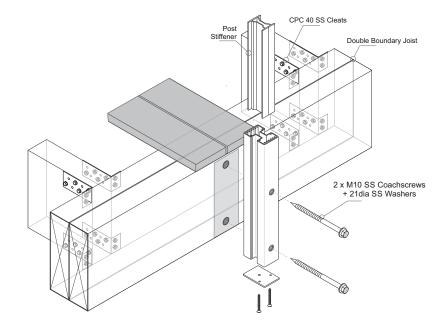
Installation / Fitting Instructions

Typical Side Fix to Timber Deck



Important Installation notes:

- 1 The Designer must ensure the structure can support the appropriate horizontal and vertical loads
- 2 Coachscrews 90mm min engagement into joists
- 3 Bond all coachscrews with SIKA Supergrip to full depth
- 4 A Rubber, EPDM or Foam Tape layer must be installed between the Post and Timber.
- 5 For detailed Boundary Joist Fixings see the applicable Joist Construction page
- 6 All screw fixings must be Stainless steel

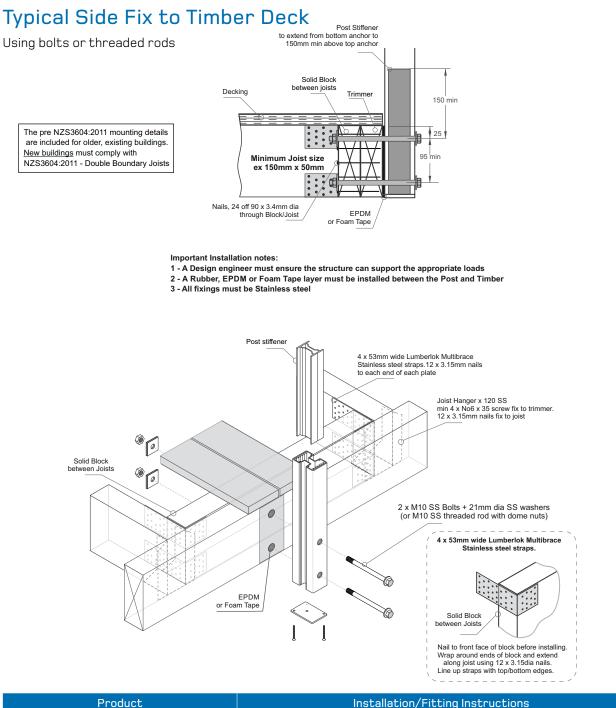


Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Timber Deck into Concrete Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



Installation / Fitting Instructions



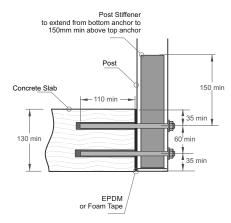
Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Timber Deck Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.

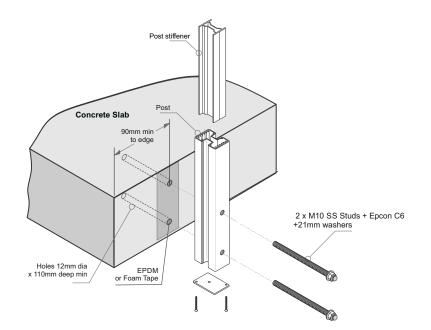


Installation / Fitting Instructions





- Important Installation notes:
- 1 A Design engineer must ensure the structure can support the appropriate loads
- 2 All fixings must engage into the structural slab
- 3 A Rubber, EPDM or Foam Tape layer must be installed between the Post and Concrete
- 4 All fixings must be Stainless steel



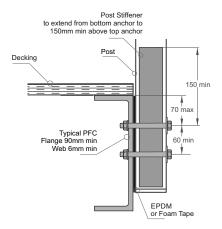
Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Concrete into Concrete Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.

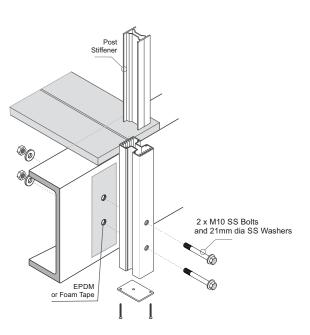


Installation / Fitting Instructions

Typical Side Fix to Steel Section



- Important Installation notes
- A Design engineer must ensure the structure can support the appropriate loads
 A Rubber, EPDM or Foam Tape layer must be installed between the Post and Steel
 All fixings must be Stainless steel

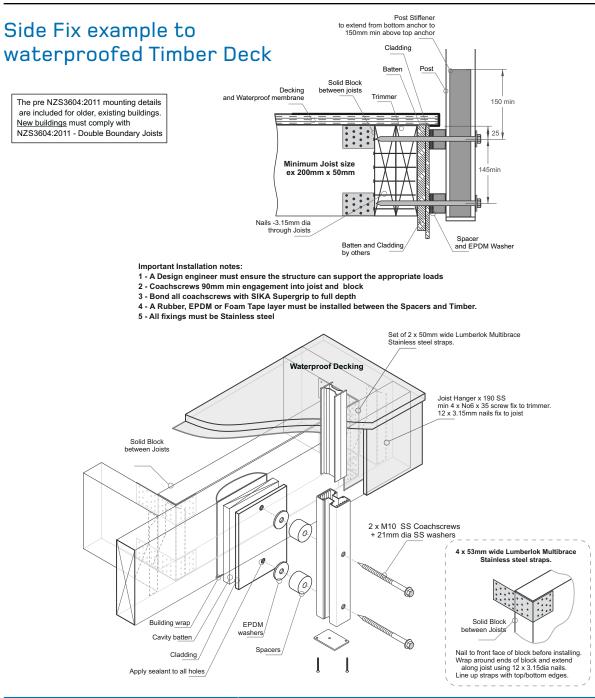


Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Steel Section Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



Installation / Fitting Instructions



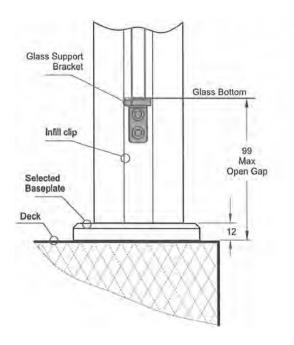
Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Side Fix example to waterproofed Timber Deck Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

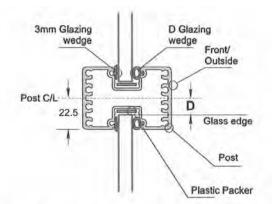
IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



Installation / Fitting Instructions

Post Details & Components



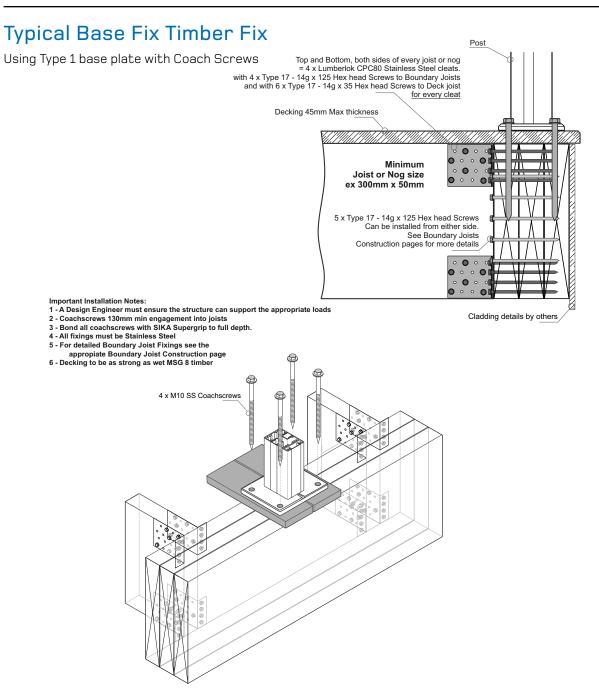


Note: Dimension D.

If using Flush Top Cap (ie NO upstand) D = 10mmIf using Notched Top Cap (ie Upstand) D = 11.5mmThe use of a plastic packer between Glass and edges of the Notched Top Cap is strongly recommended



Installation / Fitting Instructions



Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Concrete into Concrete Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.

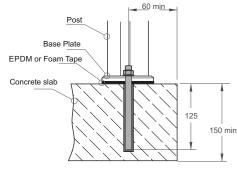




Installation / Fitting Instructions

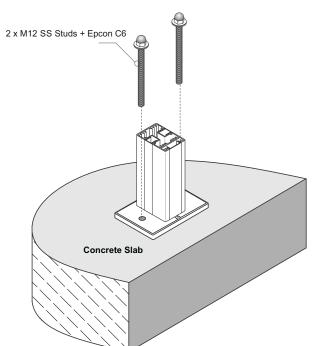
Typical Base Fix to Concrete

Using Type 3 base plate



Important Installation Notes:

- 1 A Design Engineer must ensure the structure can support the appropriate loads
- 2 All fixings must engage into the structural slab
- 3 A Rubber, EPDM or Foam Tape layer must be installed between the Baseplate and Concrete slab
- 4 All fixings must be Stainless Steel



Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Steel Section Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.

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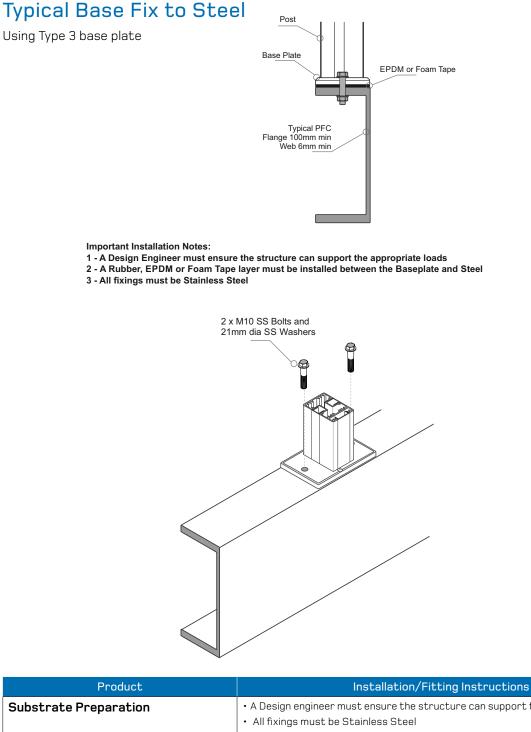


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AP78 ALUMINIUM BALUSTRADE POST SYSTEM

Installation / Fitting Instructions

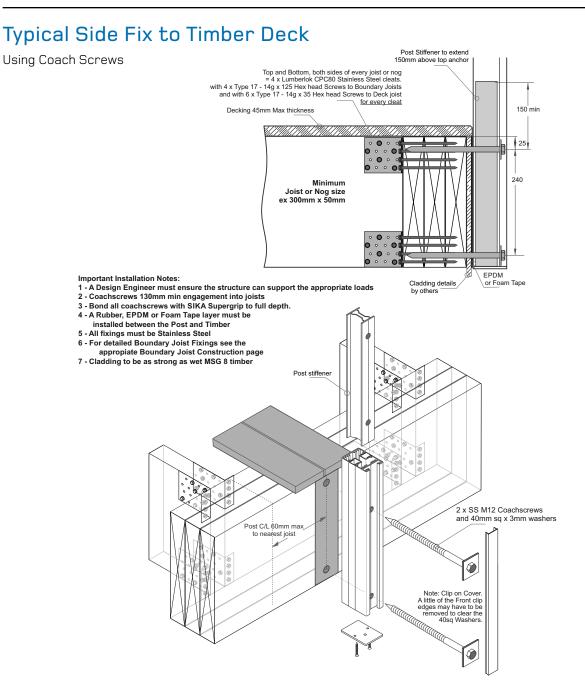


Substrate Preparation• A Design engineer must ensure the structure can support the appropriate loads
• All fixings must be Stainless Steel
• All fixings must engage the structural slabInstallation of the Semi Frameless
Post to the Supporting Structure• Please refer to the detailed PS1 which contains fixing details for respective
substrates, windzones and occupancy types
• The above diagram outlines Typical Side Fix to Steel Section Installation.CleaningOnce everything is correctly in place and the job is complete, the glass and
channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and
warm soapy water on the aluminium extrusion. We also recommend a soft sponge
or cloth, again to avoid any risk of scratching. For full care and maintenance
guidelines please refer to our comprehensive guide. Refer Page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



Installation / Fitting Instructions



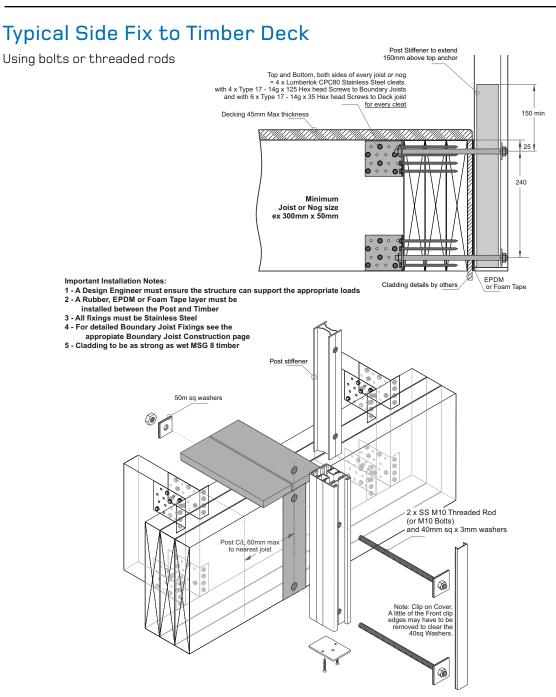
Product	Installation/Fitting Instructions					
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab 					
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Concrete into Concrete Installation. 					
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.					

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



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Installation / Fitting Instructions



Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Steel Section Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

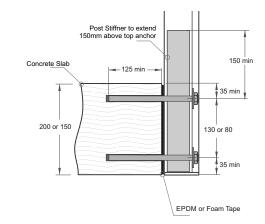
IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



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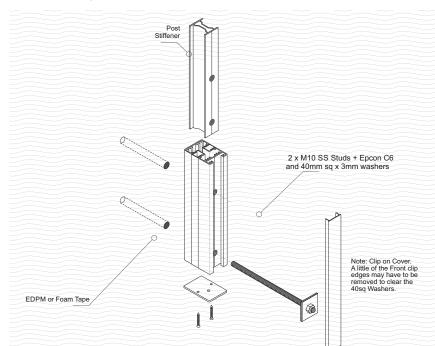
Installation / Fitting Instructions

Typical Side Fix to Concrete



Important Installation Notes:

- 1 A Design Engineer must ensure the structure can support the appropriate loads 2 All fixings must engage into the structural slab
- 3 A Rubber, EPDM or Foam Tape layer must be installed between the Post and Concrete slab
- 4 All fixings must be Stainless Steel



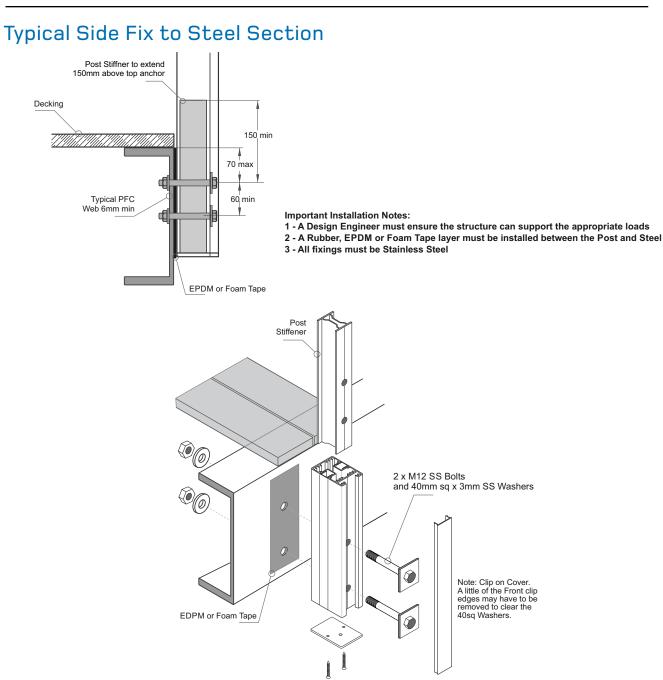
Product	Installation/Fitting Instructions
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Concrete into Concrete Installation.
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



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Installation / Fitting Instructions



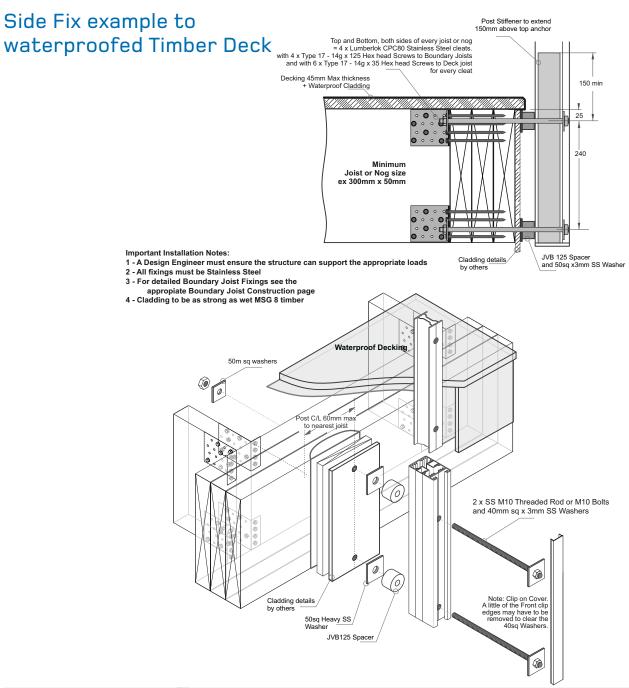
Product	Installation/Fitting Instructions					
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab 					
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Steel Section Installation. 					
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.					

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



268 METRO

Installation / Fitting Instructions



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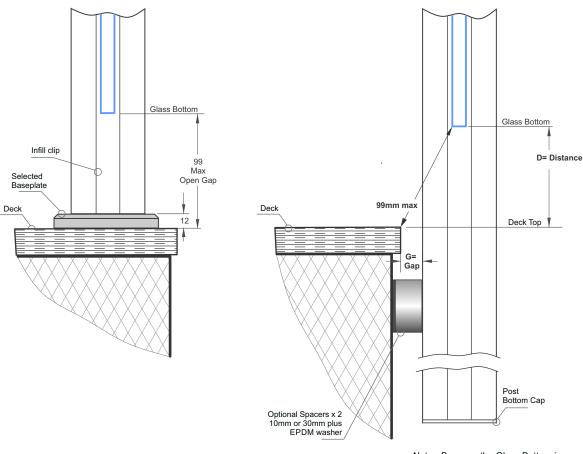
Product	Installation/Fitting Instructions					
Substrate Preparation	 A Design engineer must ensure the structure can support the appropriate loads All fixings must be Stainless Steel All fixings must engage the structural slab 					
Installation of the Semi Frameless Post to the Supporting Structure	 Please refer to the detailed PS1 which contains fixing details for respective substrates, windzones and occupancy types The above diagram outlines Typical Side Fix to Concrete into Concrete Installation. 					
Cleaning	Once everything is correctly in place and the job is complete, the glass and channel needs to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide. Refer Page 716.					

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



Installation / Fitting Instructions





Note - Because the Glass Bottom is mounted forward of the Deck Edge, the D Dimension is no longer 99mm.





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SAFELITE® STF (Sentry®) glass specified.

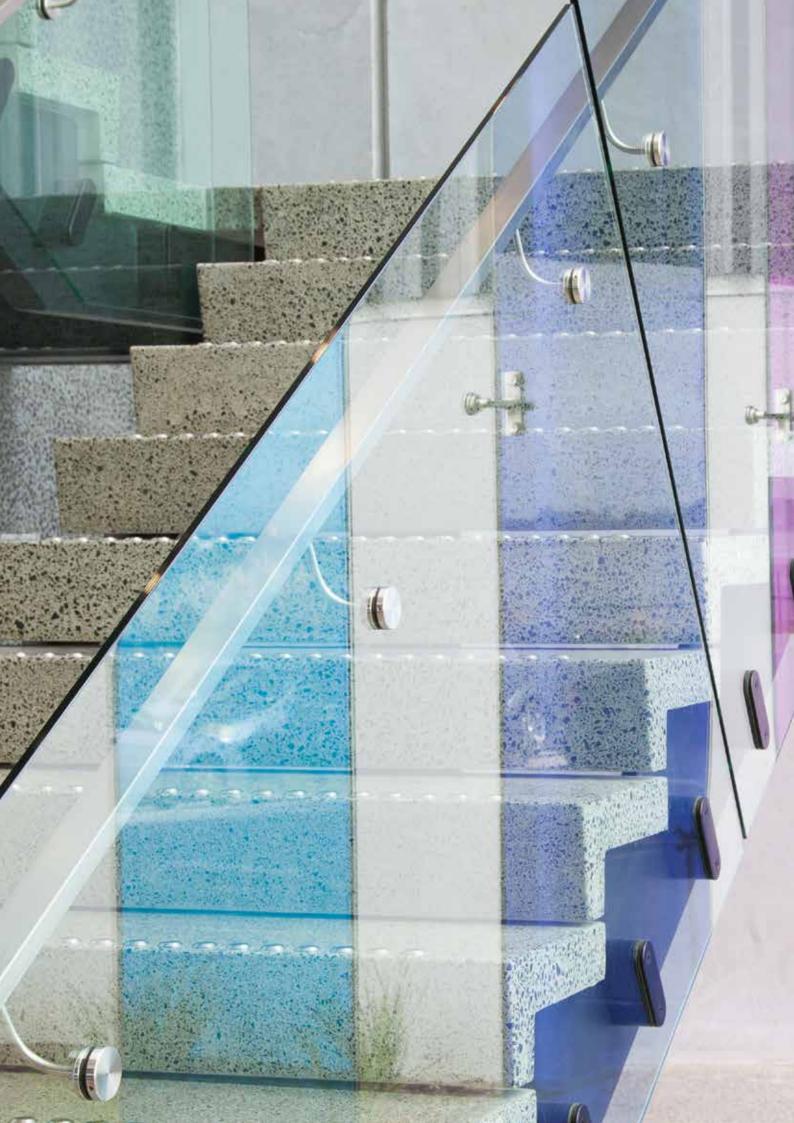
No.



Railing/Handrail Systems

Interlinking rails and handrails offer protection from falling. A range of styles and options are available from continuous interlinking rail designs fixed to the top of the glass edge to attractive standoff brackets fixed to the glass or mounted to frameless posts.







2

Railing/Handrail Systems

PRODUCT OVERVIEW	276
LINK RAIL SYSTEMS S25 LINK RAIL S40 LINK RAIL EDGETEC[®] 220 LINK RAIL 	280 280 282 284
HANDRAIL BRACKET SYSTEMS	288
MODULAR RAIL SYSTEMS	292
HANDRAIL SYSTEMS – AP65/AP78 POSTS	294
RAIL BRACKET TOP MOUNTING CAPS	294
TOP MOUNTING HAND RAILS	298

AREA ICONS KEY:





BALUSTRADES

POOL FENCE

PRODUCT OVERVIEW

Railing/Handrail

2

Metro Frameless Glass balustrade systems are typically fitted with an interlinking top rail finished in either a stainless steel or a powder coat colour that matches the balustrade. New regulations introduced in June 2016 require all monolithic glass frameless balustrades to be fitted with a continuous, interlinking rail (that is fixed to a building element).

Our range of handrail systems combine slim profiles with ergonomic and contemporary styling. Options include a top rail mounted on the glass edge, or side-mounting to the wall or glass using our stainless steel handrail brackets. Our capping rail will provide glass edge protection and is able to be fitted retrospectively.

Note: An interlinking top rail is not required on frameless glass pool fencing.

RAILING/HANDRAIL PRODUCT OVERVIEW

Commercial and Residential

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S25 LINK RAIL	300738	25 x 21mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		OVERALL LENGTH = 5800mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
		GLASS THICKNESS: 10 – 12mm					
S40 LINK RAIL	300739	40 x 30mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
		OVERALL LENGTH = 5800mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
		GLASS THICKNESS: 12 – 21.5mm					
EDGETEC [®] 220	300728	12mm Glass	ANOD NATURAL	ALUM 6063	LINK RAIL	BALUSTRADE	Internal & External
LINK RAIL	300729	15mm Glass	SILVER FROST			LINK RAIL	
FULL LENGTH	300727	Solid Wall Fixing	MILL FINISH				
		OVERALL LENGTH = 5800mm	ON REQUEST: POWDERCOAT				
		GLASS THICKNESS: 12 – 15mm					
ROUND	300109	10-12mm Glass	SS	316 STAINLESS STEEL	STAND OFF HANDRAIL BRACKET	BALUSTRADE SYSTEM COMPONENT	Internal &
ARM BRACKET	300110	12-15mm Glass	SS				External
*	300112	Solid Wall Fixing	SS				
1		GLASS THICKNESS: 10 – 15mm	ON REQUEST: POWDERCOAT				
SQUARE ARM	300113	10-12mm Glass	SS	316 STAINLESS	STAND OFF	BALUSTRADE	Internal &
BRACKET	300114	12-15mm Glass	SS	STEEL	HANDRAIL	SYSTEM	External
	300115	Solid Wall Fixing	SS		BRACKET	COMPONENT	
L#		GLASS THICKNESS: 10 – 15mm	ON REQUEST: POWDERCOAT				
HEAVY DUTY	300108	12mm Glass	SS	316 STAINLESS	STAND OFF	BALUSTRADE	Internal &
ROUND ARM BRACKET	300111	12-15mm Glass	SS	STEEL	HANDRAIL BRACKET	SYSTEM COMPONENT	External
LHE		GLASS THICKNESS: 12 – 15mm	ON REQUEST: POWDERCOAT		DIAGKET		

NOTE: The above table is for use as guidance only to assist with selection purposes.





10 YEAR HARDWARE WARRANTY

Commercial and Residential

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MODULAR ARM BRACKET	300142	Bottom For Disc: 110Hx50Lmm Top For Arm: 110Hx105Lmm	SS	316 STAINLESS STEEL	STAND OFF HANDRAIL BRACKET*	BALUSTRADE HANDRAIL	Internal & External
₩		GLASS THICKNESS: 12 – 25mm	ON REQUEST: POWDERCOAT		*Adjustable in height		
SLIMLINE RAIL	300721	5800mm	SILVER FROST	ALUM 6063	HANDRAIL	BALUSTRADE	Internal &
*Suits AP65 & AP78 Aluminium Posts	300720	5800mm	MILL FINISH		*Aluminium Post	HANDRAIL	External
	300719	2900mm	SILVER FROST		Standoff		
	300718	2900mm	MILL FINISH				
		*Available in full or half lengths	ON REQUEST: POWDERCOAT				
ROUND RAIL	300717	5800mm	SILVER FROST	ALUM 6063	HANDRAIL	BALUSTRADE	Internal &
*Suits AP65 & AP78 Aluminium Posts	300716	5800mm	MILL FINISH		*Aluminium Post Standoff	HANDRAIL	External
	300715	2900mm	SILVER FROST				
	300714	2900mm	MILL FINISH				
		*Available in full or half lengths	ON REQUEST: POWDERCOAT				
AEROFOIL RAIL -	302059	5800mm	ANOD NATURAL	ALUM 6063	HANDRAIL	BALUSTRADE	Internal &
TWIN POCKET *Suits AP65 & AP78	302060	5800mm	SILVER FROST		*Aluminium Post	HANDRAIL	External
Aluminium Posts	302058	5800mm	MILL FINISH		Standoff		
			ON REQUEST: POWDERCOAT				
RECTANGULAR	302053	5800mm	ANOD NATURAL	ALUM 6063	HANDRAIL	BALUSTRADE	Internal &
RAIL *Suits AP65 & AP78	302054	5800mm	SILVER FROST	ALON 0000		HANDRAIL	External
*Suits AP65 8 AP78 Aluminium Posts	302052	5800mm	MILL FINISH		*Aluminium Post Standoff		
			ON REQUEST: POWDERCOAT				• —•

NOTE: The above table is for use as guidance only to assist with selection purposes.







Link Rail System

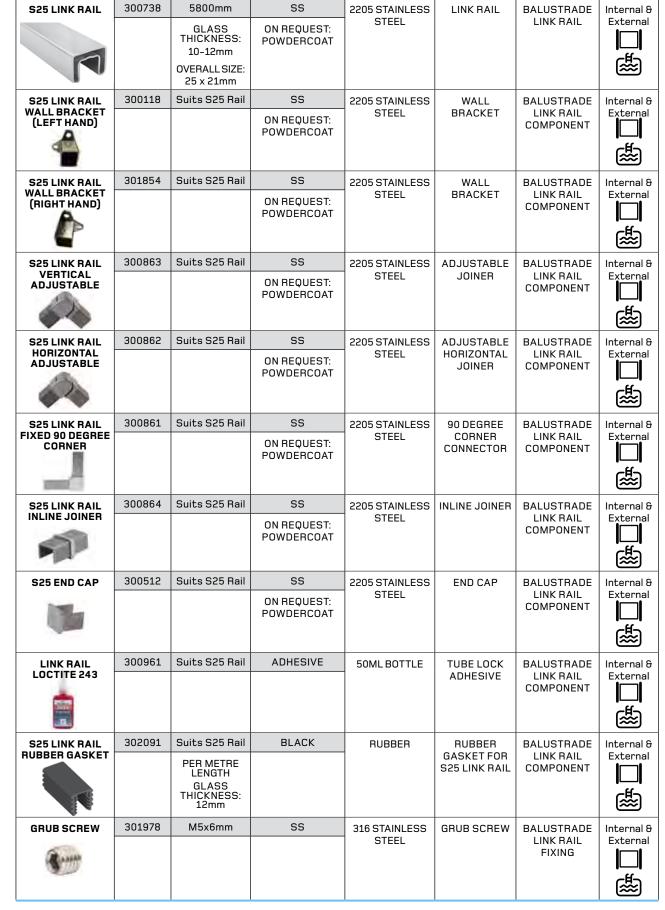
- 25 x 21mm 2205 Stainless Steel.
- Suitable for 10mm to 12mm glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- Wall mount brackets available including end caps.
- Satin stainless steel finish standard, powder-coating available by request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.
- Maximum width of glass panel is 1900mm when S25 used as a glass mounted interlinking rail.

RAILING SYSTEMS

Balustrade S25 Link Rail





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Area



Link Rail System

- ▶ 40 x 30mm 2205 Stainless Steel.
- Suitable for 12mm to 21.5mm glass thicknesses.
- Rubber gasket available to suit respective glass thicknesses.
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.

- Wall mount brackets available including end caps.
- Satin stainless steel finish standard, powder-coating available by request.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.
- Maximum width of glass panel is 1900mm when S40 used as a glass mounted interlinking rail.
- Maximum width of glass panel is 1700mm when S40 used as a bracket mounted rail (max 1000mm between brackets).

RAILING SYSTEMS

Balustrade S40 Link Rail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
S40 LINK RAIL	300739	5800mm	SS	2205 STAINLESS	LINK RAIL	BALUSTRADE	Internal &
P		GLASS THICKNESS: 12 – 21.5mm OVERALL SIZE: 40 x 30mm	ON REQUEST: POWDERCOAT	STEEL		LINK RAIL	External
S40 LINK RAIL	300156	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External
S40 LINK RAIL	301855	Suits S40 Rail	SS	2205 STAINLESS	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)			ON REQUEST: POWDERCOAT	STEEL	BRACKET	LINK RAIL COMPONENT	External
S40 LINK RAIL	300868	Suits S40 Rail	SS	2205 STAINLESS	ADJUSTABLE	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL	VERTICAL JOINER	LINK RAIL COMPONENT	External
S40 LINK RAIL	300867	Suits S40 Rail	SS	2205 STAINLESS	ADJUSTABLE	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL	HORIZONTAL JOINER	LINK RAIL COMPONENT	External
S40 LINK RAIL	300866	Suits S40 Rail	SS	2205 STAINLESS	90 DEGREE	BALUSTRADE	Internal &
FIXED 90 DEGREE CORNER			ON REQUEST: POWDERCOAT	STEEL	CORNER CONNECTOR	LINK RAIL COMPONENT	External
S40 LINK RAIL	300869	Suits S40 Rail	SS	2205 STAINLESS	INLINE JOINER	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
S40 END CAP	300513	Suits S40 Rail	SS	2205 STAINLESS	END CAP	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL		LINK RAIL COMPONENT	External
LINK RAIL	300961	Suits S40 Rail	ADHESIVE	50MM BOTTLE	TUBE LOCK	BALUSTRADE	Internal &
LOCTITE 243					ADHESIVE	LINK RAIL COMPONENT	External
S40 LINK RAIL	302092	12-13.5mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
RUBBER GASKET	302093	12-15mm	BLACK		GASKET FOR S40 LINK RAIL	LINK RAIL COMPONENT	External
	302094	13-16mm	BLACK				
	301355	16-19mm Suits S40 Rail PER METRE LENGTH	BLACK				يني ا
GRUB SCREW	301287	M5x6mm	SS	316 STAINLESS	GRUB SCREW	BALUSTRADE	Internal &
(martin				STEEL		LINK RAIL FIXING	External

2

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Link Rail System Edgetec® 220 Link Rail

- 38 x 30mm Aluminium Link Rail
- Suitable 12mm to 15mm glass thicknesses.
- Available in Natural Anodisied Finish 20 microns as standard or Silver Frost powdercoat. Special colours on request (Powdercoating or Anodising).
- Rail Components available for 90 degree corners, adjustable corners (180 degrees to 90 degrees), stairway link connectors (Maximum 35 degrees), inline joiner.
- ▶ Wall mount brackets available including end caps.

Compliance

- Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.
- Maximum width of glass panel is 1900mm when Edgetec[®] 220 used as a glass mounted interlinking rail.
- Maximum width of glass panel is 1700mm when Edgetec[®] 220 used as a bracket mounted rail (max 1000mm between brackets).

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RAILING SYSTEMS

Balustrade Edgetec[®] 220 Link Rail



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC [®] 220	300728	5800mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
LINK RAIL	300729	5800mm	SILVER FROST			LINK RAIL	External
FULL LENGTH	300727	5800mm	MILL FINISH				
		GLASS THICKNESS: 12-15mm	ON REQUEST: POWDERCOAT				
		OVERALL SIZE: 38 x 30mm					
EDGETEC [®] 220	300725	2900mm	ANOD – Natural	ALUM 6063	LINK RAIL	BALUSTRADE	Internal &
	300726	2900mm	SILVER FROST			LINK RAIL	External
HALF LENGTH	300724	2900mm	MILL FINISH				
		(Half Length) GLASS THICKNESS: 12-15mm OVERALL SIZE: 38 x 30mm	ON REQUEST: POWDERCOAT				₩
EDGETEC [®]	300593	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
220 LINK RAIL RUBBER GASKET		GLASS THICKNESS: 12mm		HOBBEH	GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT	
EDGETEC [®]	300594	2900mm	BLACK	RUBBER	RUBBER	BALUSTRADE	Internal &
220 LINK RAIL RUBBER GASKET		GLASS THICKNESS: 15mm			GASKET FOR EDGETEC® 220 LINK RAIL	LINK RAIL COMPONENT *For a 5.8m Link Rail x2 rubber gaskets lengths are required	External
EDGETEC [®] 220	300847	80x22.8x5mm	MILL	ALUM 6063	180 DEGREE	BALUSTRADE	Internal &
LINK RAIL INLINE JOINER					STRAIGHT JOINER	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300848	50x50x5mm	MILL	ALUM 6063	90 DEGREE	BALUSTRADE	Internal &
LINK RAIL 90 DEGREE JOINER					CORNER JOINER	LINK RAIL COMPONENT	External
EDGETEC [®] 220	300493	38.4 x 30.4mm	ANOD – Natural	ALUM 6063	END CAP	BALUSTRADE	Internal &
END CAP	300494	38.4 x 30.4mm	SILVER FROST				External
-	300492	38.4 x 30.4mm	MILL			COMPONENT	
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT				
EDGETEC® 220 LINK RAIL FIXED 90 DEGREE	301985	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	90 DEGREE CORNER	BALUSTRADE LINK RAIL	Internal & External
CORNER	301986	Suits Edgetec® 220 Rail	MILL		CONNECTOR	R COMPONENT	
		(Component)	ON REQUEST: POWDERCOAT				



RAILING SYSTEMS

Balustrade Edgetec[®] 220 Link Rail



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
EDGETEC®	301987	Suits Edgetec®	SILVER FROST	ALUM 6063	ADJUSTABLE	BALUSTRADE	Internal &
220 LINK RAIL HORIZONTAL ADJUSTABLE JOINER	301988	220 Rail Suits Edgetec® 220 Rail	MILL		HORIZONTAL JOINER	LINK RAIL COMPONENT	External
SUMER		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220 LINK RAIL	301989	Suits Edgetec® 220 Rail	SILVER FROST	ALUM 6063	ADJUSTABLE VERTICAL	BALUSTRADE LINK RAIL	Internal & External
VERTICAL ADJUSTABLE JOINER	301990	Suits Edgetec® 220 Rail	MILL		JOINER	COMPONENT	
it		(Component)	ON REQUEST: POWDERCOAT				
EDGETEC [®] 220	301003	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (LEFT HAND)	301004	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
EDGETEC® 220	301005	120 x 45mm	SILVER FROST	ALUM 6063	WALL	BALUSTRADE	Internal &
WALL BRACKET (RIGHT HAND)	301006	120 x 45mm	MILL		BRACKET	LINK RAIL COMPONENT	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	 ∰
EDGETEC® 220	301002	100 x 65mm	SILVER FROST	ALUM 6063	WALL BRACKET	BALUSTRADE LINK RAIL COMPONENT	Internal &
WALL BRACKET POST END MOUNT	301149	100 x 65mm	MILL				External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	_
EDGETEC [®] 220	301991	60 x 46mm	SILVER FROST	ALUM 6063	POST END	BALUSTRADE	Internal &
WALL BRACKET POST END MOUNT*	301992	60 x 46mm	MILL		MOUNT FOR AP65	LINK RAIL COMPONENT	External
*Suits AP65 Series Aluminium Post		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT			*For attaching to posts or structures	
SCREW	301993	6G x 1/4" Sq	SS	304 STAINLESS	SCREW	PAN HEAD	Internal &
(GLASS THICKNESS: 12mm, 15mm		STEEL		SCREW SUITS COMPONENT 300847 301985 301986 301003 301004 301005 301006 301002 301006 301002 301149 301991 301992	
SILICONE -	300011	V60	ADHESIVE	CARTRIDGE	SILICONE	FIXING	Internal &
						COMPONENT	







Handrail Bracket Systems

- Architecturally designed
- A range of 316 stainless steel handrail brackets are available to suit most styles, types and applications.
- For use on handrails, bannisters and glass balustrades.
- ▶ Rail brackets comply with relevant building codes.



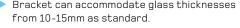
HANDRAIL BRACKET SYSTEMS

Balustrade Standoff Handrail Bracket



Round Arm Section Bracket

- Round Section Arm.
- Suitable for Timber or Stainless Steel Handles.
- 316 Satin Stainless Steel (SS) or Polished Stainless Steel (PSS), can be Powdercoated
- upon request. Bracket can accommodate glass thicknesses





Square Arm Section Bracket

- Square Section Arm.
- Suitable for Timber or Stainless Steel Handles.
- 316 Satin Stainless Steel (SS) or Polished Stainless Steel (PSS), can be Powdercoated upon request.
- Bracket can accommodate glass thicknesses from 10-15mm as standard.
- 50mm Square Cover Kit to convert Discs to a square profile.



HANDRAIL BRACKET SYSTEN

Heavy Duty – Round Arm Section Bracket

- Round Section Arm.
- Suitable for Stainless Steel Handrails.
- 316 Satin Stainless Steel (SS) or Polished Stainless Steel (PSS), can be Powdercoated upon request.
- Bracket can accommodate glass thicknesses from 12-15mm as standard.
- Requires a welded connection to the rail.





HANDRAIL SYSTEMS

Balustrade Standoff Handrail Bracket



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ROUND	300109	10-12mm	SS	316 STAINLESS	STAND OFF	BALUSTRADE	Internal &
ARM BRACKET	300110	12-15mm	SS	STEEL	HANDRAIL BRACKET	HANDRAIL COMPONENT	External
*	300112	Solid Wall Fixing	SS				
HF.		GLASS THICKNESS: 10 – 15mm	ON REQUEST: POWDERCOAT				
		CAN BE USED WITH: 50mm Stepped Disc SD50B SSS 300442					
SQUARE ARM	300113	10-12mm	SS	316 STAINLESS	STAND OFF	BALUSTRADE	Internal &
BRACKET	300114	12-15mm	SS	STEEL	HANDRAIL BRACKET	HANDRAIL COMPONENT	External
*	300115	Solid Wall Fixing	SS		BINORET		
1.E		GLASS THICKNESS: 10 – 15mm	ON REQUEST: POWDERCOAT				
L #		CAN BE USED WITH: 50mm Stepped Disc SD50B SSS 300442	ו כ				
SQUARE COVER	300742	50 x 50mm	SS	316 STAINLESS	SQUARE	BALUSTRADE	Internal &
КІТ		(Square)	ON REQUEST: POWDERCOAT	STEEL	COVER KIT SUITS COMPONENT 300109 300110 300112 300113 300114 300115	HANDRAIL COMPONENT	External
HEAVY DUTY	300108	12mm	SS	316 STAINLESS	STAND OFF	BALUSTRADE	Internal &
ROUND ARM BRACKET	300111	12-15mm	SS	STEEL	HANDRAIL	HANDRAIL	External
		Suits Edgetec® 220 Rail (Component)	ON REQUEST: POWDERCOAT		BHACKET	COMPONENT	
-		GLASS THICKNESS: 12 – 15mm					
SCREW	301778	14g x 1.5 inch	SS	304 STAINLESS	CSK SCREW	BALUSTRADE	Internal &
*For Solid Wall Fixing (Bracket Option)				STEEL	SQUARE	RE HANDRAIL COMPONENT TIMBER SUBSTRATE WALL FIXING	External
a particular						SUITS COMPONENT 300112 300115	







Modular Rail Systems

- Adjustable in height handrail bracket system.
- 316 Satin stainless steel or polished stainless steel / powdercoated upon request.
- Bracket can accommodate a glass thicknesses from 12-25mm as standard.
- Suits a 50.8mm diameter x1.5mm wall thickness satin stainless steel tube rail.

Compliance

▶ Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

MODULAR RAIL SYSTEMS

Adjustable Height Section Bracket

(To suit 50.8mm Round Tube Link Rail - Satin Stainless Steel)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MODULAR ARM BRACKET	300142	Bottom for Disc– 110Hx50Lmm Top for Arm– 110Hx105Lmm	SS	316 STAINLESS STEEL	STAND OFF HANDRAIL BRACKET* *Adjustable in height	BALUSTRADE HANDRAIL *Not included 10g Pan Head Screw	Internal & External
₩		GLASS THICKNESS: 12 – 25mm	ON REQUEST: POWDERCOAT				
MODULAR 90	300858	80x80x47mm	SS	316 STAINLESS	90 DEGREE	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL	JOINER	HANDRAIL COMPONENT	External
MODULAR ADJUSTABLE	300859	115HX47Lmm	SS	316 STAINLESS STEEL	ADJUSTABLE JOINER	BALUSTRADE HANDRAIL	Internal & External
FLUSH JOINER			ON REQUEST: POWDERCOAT		JUNCH	COMPONENT	
MODULAR INLINE FLUSH JOINER	300857	54Hx46Lmm	SS	316 STAINLESS	180 DEGREE	BALUSTRADE	Internal &
			ON REQUEST: POWDERCOAT	STEEL	INLINE JOINER	HANDRAIL COMPONENT	External
	300143	103Lx30Hmm	SS	316 STAINLESS	WALL	BALUSTRADE	Internal &
BRACKET			ON REQUEST: POWDERCOAT	STEEL	BRACKET	HANDRAIL COMPONENT *Not included 14g x 1.5 inch CSK Screw Square x2 required 301778	External
MODULAR END	300501	51x14mm	SS	316 STAINLESS	END CAP	BALUSTRADE	Internal &
САР			ON REQUEST: POWDERCOAT	STEEL		HANDRAIL COMPONENT	External

NOTE: Handrail suits a 50.8 diameter x 1.5mm wall thickness satin stainless steel tube rail. (Ordered via request only/not stocked via Metro Frameless Glass).

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DWARE



Handrail Systems Rail Bracket Top Mounting Caps for AP65/AP78 Posts

- Aluminium post arm bracket is suitable for timber or stainless steel hand rails.
- Available in standard silver frost finish. Special colours on request.
- Powder coated aluminium.

Compliance

Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.



AP65 HANDRAIL SYSTEMS

Aluminium Post Rail Bracket and Top Mounting Caps



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ALUMINIUM POST	300101	-	SILVER FROST	ALUM 6063	STAND OFF	AP65/AP78	Internal &
ARM BRACKET *Suits AP65 & AP78	300102	_	MILL FINISH		HANDRAIL BRACKET /	BALUSTRADE RAIL	External
Aluminium Posts		* Includes x2 grub	ON REQUEST:		WALL CLIP	COMPONENT	
		screws	POWDERCOAT		*Aluminium Post Standoff (For wall		the second se
					or post mounting)		
- II							
AP65MF HANDRAIL FULL	500312	66 x 46mm	SILVER FROST	ALUM 6063	HANDRAIL BRACKET TOP	AP65 BALUSTRADE	Internal & External
HEIGHT TOP MOUNT CAP	500313	66 x 46mm	MILL FINISH		MOUNT CAP	RAIL	
*Supplied with M8 x 20 Grub Screw			ON REQUEST: POWDERCOAT			COMPONENT	
x 20 Grub Screw							E
AP65CMF	500314	66 x 66mm	SILVER FROST	ALUM 6063	HANDRAIL	AP65	Internal &
HANDRAIL FULL HEIGHT CORNER	500315	66 x 66mm	MILL FINISH		BRACKET TOP MOUNT CAP	BALUSTRADE	External
TOP MOUNT CAP *Supplied with M8			ON REQUEST:		MOONTCAL	COMPONENT	
x 20 Grub Screw			POWDERCOAT				(
AP65MCI	500316	66 x 46mm	SILVER FROST	ALUM 6063	HANDRAIL	AP65	Internal S
HANDRAIL LOW HEIGHT INTER TOP	500317	66 x 46mm	MILL FINISH	ALOW 0003	BRACKET TOP	BALUSTRADE	External
MOUNT CAP *Supplied with M8		*Double Pocket	ON REQUEST:		MOUNT CAP	RAIL COMPONENT	
x 20 Grub Screw			POWDERCOAT				
18							
AP65CMC	500318	66 x 66mm	SILVER FROST	ALUM 6063	HANDRAIL	AP65	Internal &
HANDRAIL LOW HEIGHT CORNER	500319	66 x 66mm	MILL FINISH	ALOW 0005	BRACKET TOP	BALUSTRADE	External
TOP MOUNT CAP		*Double Pocket	ON REQUEST:		MOUNT CAP	RAIL COMPONENT	
*Supplied with M8 x 20 Grub Screw			POWDERCOAT				الله
1							
	500320	66 x 46mm	SILVER FROST	ALLINA 0000		4005	later - I C
AP65MCEL HANDRAIL LOW	500320	66 x 46mm	MILL FINISH	ALUM 6063	HANDRAIL BRACKET TOP	AP65 BALUSTRADE	Internal & External
HEIGHT END TOP MOUNT CAP (LEFT)		*Single Pocket	ON REQUEST:		MOUNT CAP (LEFT)	RAIL COMPONENT	
*Supplied with M8 x 20 Grub Screw		_	POWDERCOAT				ي ا
1							
-							
AP65MCER HANDRAIL LOW	500322	66 x 46mm	SILVER FROST	ALUM 6063	HANDRAIL BRACKET TOP MOUNT CAP	AP65 BALUSTRADE	Internal & External
HEIGHT END TOP MOUNT CAP	500323	66 x 46mm	MILL FINISH			RAIL	
(RIGHT) *Supplied with M8		*Single Pocket	ON REQUEST: POWDERCOAT		(RIGHT)	COMPONENT	
x 20 Grub Screw							
6							

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AP78 HANDRAIL SYSTEMS

Aluminium Post Rail Bracket and Top Mounting Cap



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ALUMINIUM POST	300101	-	SILVER FROST	ALUM 6063	STAND OFF	AP65/AP78	Internal &
ARM BRACKET *Suits AP65 &	300102	_	MILL FINISH		HANDRAIL BRACKET /	BALUSTRADE RAIL	External
AP78 Aluminium Posts		* Includes x2 grub	ON REQUEST:		WALL CLIP	COMPONENT	
		screws	POWDERCOAT		*Aluminium Post Standoff (For wall		(#)
					or post mounting)		
0							
AP78MF	500627	78 x 54mm	SILVER FROST	ALUM 6063	HANDRAIL	AP78	Internal &
HANDRAIL FULL HEIGHT TOP	500628	78 x 54mm	MILL FINISH		BRACKET TOP MOUNT CAP	BALUSTRADE RAIL	External
MOUNT CAP *Supplied with M8			ON REQUEST: POWDERCOAT			COMPONENT	
x 20 Grub Screw			1 OWBEIIOO/A				E
the second							
AP65CMF	500314	66 x 66mm	SILVER FROST	ALUM 6063	HANDRAIL	AP78	Internal &
HANDRAIL FULL HEIGHT CORNER	500315	66 x 66mm	MILL FINISH		BRACKET TOP MOUNT CAP	BALUSTRADE RAIL	External
TOP MOUNT CAP *Supplied with M8			ON REQUEST: POWDERCOAT			COMPONENT	
x 20 Grub Screw			POWDERCOAT				يني الله
and the second second							
AP78MCI	500629	78 x 54mm	SILVER FROST	ALUM 6063	HANDRAIL	AP78	Internal &
HANDRAIL LOW	500630	78 x 54mm	MILL FINISH		BRACKET TOP	BALUSTRADE	External
MOUNT CAP *Supplied with M8		*Double Pocket	ON REQUEST:		MOUNT CAP	COMPONENT	
x 20 Grub Screw			POWDERCOAT				
0							
5							
AP65CMC HANDRAIL LOW	500318	66 x 66mm	SILVER FROST	ALUM 6063	HANDRAIL BRACKET TOP	AP78 BALUSTRADE	Internal & External
HEIGHT CORNER TOP MOUNT CAP	500319	66 x 66mm *Double Pocket			MOUNT CAP	NT CAP RAIL	
*Supplied with M8 x 20 Grub Screw		"Double Focket	ON REQUEST: POWDERCOAT			COMPONENT	
AP78 LOW HEIGHT	500625	78 x 54mm	SILVER FROST	ALUM 6063	HANDRAIL	AP78	Internal &
END TOP MOUNT CAP (LEFT)	500626	78 x 54mm	MILL FINISH		BRACKET TOP MOUNT CAP	BALUSTRADE RAIL	External
*Supplied with M8 x 20 Grub Screw		*Single Pocket	ON REQUEST: POWDERCOAT		(LEFT)	COMPONENT	
160			FUWDERCUAI				
1							
- Ban							
AP78 LOW HEIGHT	500623	78 x 54mm	SILVER FROST	ALUM 6063	HANDRAIL	AP78	Internal &
END TOP MOUNT CAP (RIGHT	500624	78 x 54mm	MILL FINISH		BRACKET TOP MOUNT CAP (RIGHT)	BALUSTRADE RAIL	External
*Supplied with M8 x 20 Grub Screw		*Single Pocket	ON REQUEST:			COMPONENT	
6			POWDERCOAT				
-							
					1	I	







Handrail Systems Top Mounting Hand Rails for AP65/AP78 Posts

- Aluminium Rectangle (Slimline) and Round Rail option suits AP65 & AP78 Aluminum Post.
- Option to be mounted to the top of glass, or sit on a square or round bracket, or top mounted on a post adaptor top cap.
- Available in standard silver frost finish. Special colours on request.
- Powder coated aluminium.

Compliance

Complies with NZS 4223.3.2016 and the latest amendment of New Zealand Building Code B1.

Slimline Rectangular Handrail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area		
SLIMLINE RAIL	300721	5800mm	SILVER FROST	ALUM 6063	RAIL	BALUSTRADE	Internal &		
*Suits AP65 & AP78 Aluminium	300720	5800mm	MILL FINISH		*Aluminium Post Standoff	RAIL	External		
Posts	300719	2900mm	SILVER FROST						
	300718	2900mm	MILL FINISH						
		*Available in full or half lengths	ON REQUEST: POWDERCOAT						
SLIMLINE	300467	60x15x3mm	SILVER FROST	ALUM 6063	END CAP	BALUSTRADE	Internal &		
END CAP	300468	60x15x3mm	MILL FINISH			RAIL COMPONENT	External		
~ ~		*Can be used as RH or LH	ON REQUEST: POWDERCOAT			SUITS COMPONENT 300721 300720 300719 300718			
SLIMLINE INLINE	301883	100 x 17.5mm	MILL FINISH	ALUM 6063	SLIMLINE	BALUSTRADE	Internal &		
180 DEGREE JOINER	300845	100 x 17.5mm	MILL FINISH		JOINER	RAIL COMPONENT	External		
		*Set of two 17.5 and 14mm	ON REQUEST: POWDERCOAT				SUITS COMPONENT 300721 300720 300719 300718	L S	
SLIMLINE 135	301882	98x 17.5mm	MILL FINISH	ALUM 6063	SLIMLINE	SLIMLINE	-	BALUSTRADE	Internal &
DEGREE JOINER	300844	95 x 14mm	MILL FINISH		JOINER	RAIL COMPONENT	External		
		*Set of two 17.5 and 14mm	ON REQUEST: POWDERCOAT			SUITS COMPONENT 300721 300720 300719 300718	∟ ∰		
SLIMLINE 90	301881	67.5x17.5mm	MILL FINISH	ALUM 6063	SLIMLINE	BALUSTRADE	Internal &		
DEGREE CORNER JOINER	300846	64 x 14mm *Set of two 17.5 and 14mm	MILL FINISH		JOINER	RAIL COMPONENT SUITS COMPONENT 300721	External		
Concession of the local division of the loca						300720 300719 300718			

Note: Infill clips are not used with the Slimline Rectangular rail.







Round Handrail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
ROUND RAIL	300717	5800mm	SILVER FROST	ALUM 6063	RAIL	BALUSTRADE	Internal &	
*Suits AP65 & AP78 Aluminium	300716	5800mm	MILL FINISH		*Aluminium Post Standoff	RAIL	External	
Posts	300715	2900mm	SILVER FROST					
	300714	2900mm	MILL FINISH					
			ON REQUEST: POWDERCOAT					
ROUND	300465	54x40 x3mm	SILVER FROST	ALUM 6063	END CAP	BALUSTRADE	Internal &	
END CAP	300466	54x40 x3mm	MILL FINISH			RAIL COMPONENT	External	
			ON REQUEST: POWDERCOAT			SUITS COMPONENT 300717 300716 300715 300714		
ROUND INLINE 180 DEGREE	300842	150x34 x3mm	MILL FINISH	ALUM 6063	HALF ROUND	BALUSTRADE RAIL	Internal & External	
JOINER					JOINER	JOINER	COMPONENT SUITS COMPONENT 300716 300715 300714	
ROUND	300843	100x30x3mm	MILL FINISH	ALUM 6063	HALF	BALUSTRADE	Internal &	
90 DEGREE CORNER JOINER					ROUND JOINER	RAIL COMPONENT SUITS COMPONENT 300717 300716 300715 300714		
INFILL CLIP	301842	17.1mmx5.8m	SILVER FROST	ALUM 6063	INFILL CLIP	BALUSTRADE	Internal &	
EXTRUSION	301817	17.1mm x5.8m	MILL FINISH			RAIL COMPONENT	External	
11			ON REQUEST: POWDERCOAT			SUITS COMPONENT 300717 300716 300715 300714		



Aerofoil Handrail

KAIL 302060 5800mm SILVER FROST AP79 Aluminum Posts 302058 5800mm MILL FINISH Posts 0N REQUEST. POWDERCOAT 0N REQUEST. POWDERCOAT ALUM 6063 END CAP BALUSTRAC RAIL COMPONEN AEROFOIL END CAP 302061 80x26x3mm MILL FINISH ALUM 6063 END CAP BALUSTRAC RAIL COMPONEN 302061 80x26x3mm MILL FINISH ALUM 6063 END CAP BALUSTRAC RAIL COMPONEN 302061 80x26x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER SUITS COMPONEN 302058 4EROFOIL 90 DEGREE CORNER JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAC RAIL COMPONEN 302058 AEROFOIL 90 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAC RAIL COMPONEN 302058 INFILL CLIP EXTRUSION 301842 171mm x 5.8m SILVER FROST NILL FINISH ALUM 6063 INFILL CLIP RAIL COMPONEN 302058 BALUSTRAC RAIL COMPONEN	Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
*Sults AP65 6 AP78 Aluminium Posts 302060 5800mm SILVER FROST Standoff Standoff AEROFOIL END CAP 302062 80x26x3mm ANOD NATURAL 90x26x3mm ALUM 6063 END CAP BALUSTRAD RAIL COMPONEN 302061 80x26x3mm MILL FINISH ALUM 6063 END CAP BALUSTRAD RAIL COMPONEN 302061 80x26x3mm MILL FINISH ALUM 6063 END CAP BALUSTRAD RAIL COMPONEN 302061 80x26x3mm MILL FINISH ALUM 6063 END CAP BALUSTRAD RAIL COMPONEN 302061 80x26x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD SUITS 302064 125x125mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302059 SUITS SUITS AEROFOIL 90 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302059 MIFILL CLIP EXTRUSION 301842 171mm x 5.8m SILVER FROST ON REQUEST. POWDERCOAT ALUM 6063 INFILL CLIP BALUSTRAD RAIL COMPONEN		302059	5800mm	ANOD NATURAL	ALUM 6063	RAIL	BALUSTRADE	Internal &
AP78 Aluminium Posts 302058 5800mm MILL FINISH AEROFOIL END CAP 302062 80x26x3mm ANOD NATURAL 302063 ALUM 6063 END CAP BALUSTRAD RAIL COMPONEN 302061 80x26x3mm SILVER FROST 302061 ON REQUEST. POWDERCOAT ALUM 6063 END CAP BALUSTRAD RAIL COMPONEN 4EROFOIL 90 DEGREE CORNER JOINER 302064 125x125mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 4EROFOIL 90 DEGREE CORNER JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 4EROFOIL 90 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302089 4EROFOIL 90 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302089 4EROFOIL 90 DEGREE JOINER 301842 171mm x 5.8m SILVER FROST NILL FINISH ALUM 6063 INFILL CLIP RAIL COMPONEN SUITS		302060	5800mm	SILVER FROST			RAIL	External
AEROFOIL END CAP 302062 80x26x3mm ANOD NATURAL SUCER FROST ALUM 6063 END CAP BALUSTRAD RAIL COMPONEN 302061 80x26x3mm SILVER FROST ALUM 6063 END CAP BALUSTRAD RAIL COMPONEN 302061 80x26x3mm MILL FINISH ALUM 6063 END CAP BALUSTRAD RAIL COMPONEN 302061 80x26x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 4EROFOIL 90 DEGREE CORNEN JOINER 302064 125x125mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 4EROFOIL INLINE 180 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD SUITS SUITS COMPONEN 302059 SUITS COMPONEN 302059 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302059 MILL FINISH JUN 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302039 ALUM 6063 INFILL CLIP BALUSTRAD RAIL COMPONEN 302039 MILL FINISH ON REQUEST. POWDERCAAT ALUM 6063 INFILL CLIP BALUSTRAD R	AP78 Aluminium	302058	5800mm	MILL FINISH				
END CAP 302063 90x26x3mm SILVER FROST 302061 90x26x3mm MILL FINISH COMPONEN 302061 90x26x3mm MILL FINISH SUITS 302061 90x26x3mm MILL FINISH SUITS 90 DEGREE CORNER JOINER 302064 125x125mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 4 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 4 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 100 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 100 DEGREE JOINER 301842 17.1mm x 5.8m SILVER FROST 302058 ALUM 6063 INFILL CLIP RAIL COMPONEN BALUSTRAD RAIL COMPONEN	Fosts							
302063 80x26x3mm SILVER PROST 302061 80x26x3mm MILL FINISH 302061 80x26x3mm MILL FINISH ON REQUEST: POWDERCOAT ON REQUEST: POWDERCOAT SUITS AEROFOIL 90 DEGREE CORNER JOINER 302064 125x125mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN AEROFOIL 180 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN INFILL CLIP EXTRUSION 301842 17.1mm x 5.8m SILVER FROST ON REQUEST: POWDERCOAT ALUM 6063 INFILL CLIP INFILL CLIP BALUSTRAD RAIL COMPONEN		302062	80x26x3mm	ANOD NATURAL	ALUM 6063	END CAP	BALUSTRADE	Internal &
302061 80x26x3mm MILL FINISH 0 N REQUEST: POWDERCOAT ON REQUEST: POWDERCOAT SUITS COMPONEN 302059 302059 4 302064 125x125mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302059 4 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302059 4 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302059 180 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302059 INFILL CLIP EXTRUSION 301842 17.1mm x 5.8m SILVER FROST ON REQUEST: POWDERCOAT ALUM 6063 INFILL CLIP INFILL CLIP BALUSTRAD SUITS	END CAP	302063	80x26x3mm	SILVER FROST				External
ON REQUEST: POWDERCOAT ON REQUEST: POWDERCOAT COMPONEN SU2059 302059 AEROFOIL 90 DEGREE CORNER JOINER 302064 125x125mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN SUITS AEROFOIL 180 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302059 INFILL CLIP EXTRUSION 301842 17.1mm x 5.8m SILVER FROST MILL FINISH ALUM 6063 INFILL CLIP INFILL CLIP EXTRUSION BALUSTRAD RAIL COMPONEN SUITS		302061	80x26x3mm	MILL FINISH				
90 DEGREE CORNER JOINER Image: Constant of the second	000						COMPONENT	
CORNER JOINER COMPONEN CORNER JOINER SUITS AEROFOIL INLINE 302065 JOINER 302065 JOINER JOINER	AEROFOIL	302064	125x125mm	MILL FINISH	ALUM 6063	AEROFOIL	BALUSTRADE	Internal &
AEROFOIL INLINE 180 DEGREE JOINER 302065 150x56.5x3mm MILL FINISH ALUM 6063 AEROFOIL JOINER BALUSTRAD RAIL COMPONEN 302059 Image: Suff Stress of the stress						JOINER		External
INFILL CLIP EXTRUSION 301842 17.1mm x 5.8m SILVER FROST MILL FINISH ALUM 6063 INFILL CLIP INFILL CLIP EXTRUSION BALUSTRAD RAIL COMPONEN							SUITS COMPONENT 302059 302060	
JOINER JOINER COMPONEN Image: Solution of the state		302065	150x56.5x3mm	MILL FINISH	ALUM 6063	AEROFOIL	DIL BALUSTRADE	Internal &
EXTRUSION 301817 17.1mm x 5.8m MILL FINISH ON REQUEST: POWDERCOAT SUITS						JOINER	COMPONENT SUITS COMPONENT 302059 302060	External
30181/ 17.1mm x 5.8m MILL FINISH COMPONEN ON REQUEST: POWDEBCOAT SUITS		301842	17.1mm x 5.8m	SILVER FROST	ALUM 6063	INFILL CLIP	BALUSTRADE	Internal &
POWDEBCOAT SUITS	EVINOSION	301817	17.1mm x 5.8m	MILL FINISH			COMPONENT	External
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1						COMPONENT 300717 300716 300715	

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HARDWARE





Rectangular Handrail

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
RECTANGULAR	302053	5800mm	ANOD NATURAL	ALUM 6063	RAIL	BALUSTRADE	Internal &
RAIL *Suits AP65 &	302054	5800mm	SILVER FROST		*Aluminium Post Standoff	RAIL	External
AP78 Aluminium	302052	5800mm	MILL FINISH				
Posts			ON REQUEST: POWDERCOAT				
RECTANGULAR	302056	55x40.9x3mm	ANOD NATURAL	ALUM 6063	END CAP	BALUSTRADE	Internal &
END CAP	302057	55x40.9x3mm	SILVER FROST			RAIL COMPONENT	External
	302055	55x40.9x3mm	MILL FINISH				
<u> </u>			ON REQUEST: POWDERCOAT			SUITS COMPONENT 302053 302054 302052	E
RECTANGULAR	302064	125x125mm	MILL FINISH	ALUM 6063	RECTANGULAR	BALUSTRADE	Internal &
90 DEGREE CORNER JOINER					JOINER	RAIL COMPONENT	External
						SUITS COMPONENT 302053 302054 302052	
RECTANGULAR	302065	150x56.5x3mm	MILL FINISH	ALUM 6063	AEROFOIL	BALUSTRADE	Internal &
INLINE 180 DEGREE JOINER					JOINER	RAIL COMPONENT SUITS COMPONENT 302053 302054 302052	External
INFILL CLIP	301842	17.1mm x 5.8m	SILVER FROST	ALUM 6063	INFILL CLIP	BALUSTRADE	Internal &
EXTRUSION	301817	17.1mm x 5.8m	MILL FINISH			RAIL COMPONENT	External
11		*Set of two 17.5 and 14mm	ON REQUEST: POWDERCOAT			SUITS COMPONENT 300717 300716 300715 300714	









Frameless Commercial Doors

A number of design options are possible to suit specific onsite applications. Our established range has proven performance and offers designers options including, hinged, sliding, frameless glass with and without bottom rails, pivot and bi-fold doors.







Frameless Commercial Doors

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AREA ICONS KEY:

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PIVOT HINGED DOORS DOOR

SLIDING DOOR

E

STACKING BIFOLDING DOOR

DOOR



Frameless Commercial Doors, Hinged, Pivot & Sliding

Commercial contract glazing is a major part of Metro Frameless Glass's presence in the New Zealand flat glass market. Metro is able to offer various patch fittings and floor springs to suit a broad range of applications.

The Metro Commercial Door range consists of a wide array of basic types and variants, including sliding door systems enabling the conception of glass assemblies to suit a vast range of requirements. Our range of Patch Fittings not only makes the glass assemblies look visually striking but also technically sound.

Guidance Notes for Frameless Glass Doors and Assemblies

Frameless glass doors using TEMPAFLOAT® Toughened Safety Glass (TSG) with patch fittings and rails have long and successful history and they have advanced in the last decade with an ever increasing range of innovative new hardware designs.

There are some basic guidelines that limit door sizes, such as;

- Most door patch fittings and doors rails are designed for 10 and 12 mm monolithic Toughened Safety Glass.
- Some patch fittings can be modified for 15mm glass but special fittings are normally required for 15 and 19mm glass.
- Most patch fittings are NOT designed for toughened Laminated Structural Glass.
- There are a range of floor spring closers and they are limited in weight and door width, based on the maximum opening force (torque) in Nm, (normal range 15,25,35,53 Nm).
- Standard springs are limited to 100 Kg and heavyweight springs up to 300 Kg.
- Larger floor spring usually require a deeper rebate in the floor (40mm standard to 60mm max.)
- Floor springs are available in hold-open and non-hold-open types.
- Overhead closers can also be used, but are normally limited 1050 mm wide external doors and 1250 wide internal doors.
- Some doors can be fitted on hinges, but they are normally limited to internal doors up to 100 kg and 1000mm wide.
- Some modern hinges are hydraulic self-closing but most are free swinging.
- Some specialised hardware uses complex countersunk holes and fixings which allow thicker glass, but can create high localized stress around the holes.
- Frameless glass doors can have applied seals for smoke and water but they are not water or draft proof.
- Extra care is required for glass doors in high wind load zones that they do not open and close under positive and negative pressure and rotate and fracture.
- Large doors require larger clearances (gaps) as they can twist and bend during operation.
- Metro Frameless Glass doesn't recommend the use of Toughened Laminated Safety Glass (TLSG).

Door Types

Frameless glass doors are typically known in 3 Types; See diagram on page 310 for details.

- Type A Doors with rails top and bottom
- Type B Doors with top patch fittings and bottom rails
- Type C Doors with top and bottom patch fittings

- Door locks can be fitted in the rails and or in the patch fittings. Type A, B and C doors can be used on pivot and sliding but the rails and locks are slightly different.
- Special proprietary systems like Dorma Manet, or similar which use countersunk fittings and the like must meet the manufacturers specifications.

Typically pivot doors with rails and or patch fittings are limited as follows;

Туре	Thickness mm	Width mm
ΑθΒ	10	1100
ΑθΒ	12	1200
AδB	15	1300
С	10	1000
С	12	1100
С	15	1200

Notes:

 These sizes are for standard pivot doors with pivot positions approximately 50 to 60mm from the edge. In some cases the pivot can be moved further in from the edge up to 300mm to make wider door panel.
 These sizes should not exceed the limits provided by the hardware manufacturer.

- Doors are normally limited in height by the design loads which are dead weight, wind and human impact, and the fitting types and hardware capacity.
- Tall doors flex and deflect in the middle which can be disturbing to users and puts undue loads on the fittings and connection.
- Tall doors can also bend under their own weight, but this is not a problem with top hung sliders and these are often taller than ground based pivot or sliding doors.
- Glass doors can bow during toughening and the taller they are the more noticeable it is, so bow limits should be discussed with the manufacturer. In some cases, they should be toughened as LH and RH matching pairs.
- When doors are closed and locked they act like two edge supported glass and can be calculated as such using 2 edge wind load calculations.
- Central door locks can also assist in reducing deflection, but only when locked.
- Deflections are normally limited to Span/60 which can be a large deflection for a high door, for example 2500/60 = 42mm. Sometimes deflections are limited to 30mm maximum by using thicker glass.
- Door handles are normally ignored in design but long and vertical handles fixed at either end and at the centre can stiffen the door and reduce deflection, however this is complex to calculate.



3

1										
i	following ta	ble pro	vide	d a guide;						
ł	Based on typical wind zones from NZS 4223 Part 4:2008 the									

Thickness	Internal	Low	Medium	High	Very High
	0.5 kPa	0.72 kPa	0.96 kPa	1.36 kPa	1.76 kPa
10mm	2400	2200	2000	1800	NA
12mm	2800	2600	2400	2200	2000
15mm	3600	3400	3200	2800	2400
19mm	4000	4000	4000	3400	3200

Notes:

1. For doors with patch fittings these sizes may exceed the hardware limits and are therefore not suitable.

For doors with rails the span can be taken as the free span between rails, or from rail to edge, which generally increases the door opening size.
 For bottom supported sliding doors use the table, as long as the college.

3. For bottom supported sliding doors use the table, as long as the rollers and rails are suitable for the weight.

 $4.\ For top\ hung\ sliding\ doors\ use\ the\ table\ and\ check\ with\ the\ manufacturers\ specification\ for\ the\ capacity\ of\ the\ door\ hardware.$

Sliding Doors

Sliding doors can be top hung with bottom guides or on bottom rails with rollers or with special wheel fittings. The door height shall be selected to wind pressure, and the width to manufactures specification depending on the capacity of the door hardware.

Door Assemblies

- It is important when using doors in entrance assemblies with side panels and over panel that the assembly is rigid otherwise the deflection of the door will increase. Rigidity is normally achieved by using small over panel and/or side panels or with full height or cantilevered glass fins. Cantilevered glass fins must be clamped using mechanical fixing to gain a friction grip so to resist turning moments. The fin brackets must be securely fixed to the building structure, which must be rigid.
- Cantilevered glass fins are normally 200 to 250mm wide for fins up to 1000mm long 300 to 350 mm wide for fins up to 2000mm long.
- As a guide fins are required in the following situations; 10mm glass- when the width of the side panel plus the height of the over panel exceed 1200mm and are both greater than 400mm 12mm glass- when the width of the side panel plus the height of the over panel exceed 1500mm and are both greater than 500mm.

Fins

Stabilising Fins are necessary to cope with the loads imposed on a door assembly by the action of the door and the external wind loads. The fins must be securely fixed to a suitably rigid structure at the top of the assembly, by means of back to back metal angle fin brackets clamped to the fin using gaskets and bolts.

It is important that fin fixing issues are resolved at the design stage due to the turning moments and reaction forces transferred to the support structure. In addition, the correct fasteners must be used for various substrates and should be of sufficient size to resist tensions from turning forces and shear forces at the connection interface.

Fin brackets are normally zinc plated steel if they are hidden in the ceiling, but they are available in stainless steel if they are exposed and visible. An option is to use a stainless steel cover over the steel bracket.

Frameless Glass Door Types

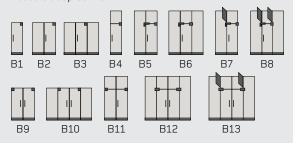
Type A

Full width rails fitted along top and bottom edges.



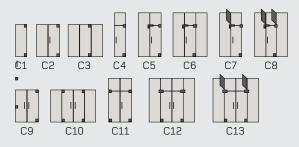
Type B

Full width rails fitted along bottom edge only, patch fitted at top corner.



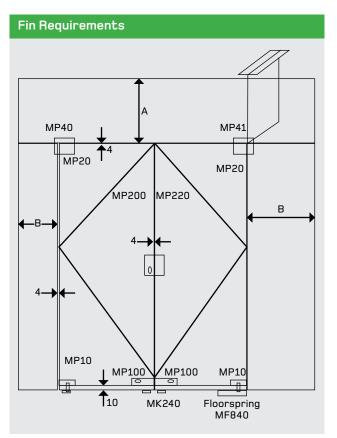
Туре С

Patches fitted at top and bottom corners.



Fin Support Systems

Typical glass fin support systems are shown below but it is also possible to fix to metal mullions, trusses, space frames or other support structures for lateral support.



Fin Requirements

www.metroglass.co.nz

10mm glass When the width of the sidepanel (B) plus the height of the overpanel (A) exceeds a total of 1200mm a fin is required, but not necessary if (A) or (B) are less than 400mm.

12mm glass When the width of the sidepanel (B) plus the height of the overpanel (A) exceeds a total of 1500mm a fin is required, but not necessary if (A) or (B) are less than 500mm.







Commercial Hinged and Pivot

All door types can be supplied in either a single or double leaf configuration, along with a wide choice of options including matching side lights, decorative features and hardware. Standard options include 'frameless patches' or top/bottom rails.

Patch Fittings

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MP10 BOTTOM	301083	160x50x30mm	ANOD NATURAL	316 STAINLESS	воттом	PIVOT DOOR	Internal &
PATCH FITTING	301084	160x50x30mm	PSS	STEEL	PATCH	HINGE DOOR	External
Contraction of the local distance of the loc	301085	160x50x30mm	SS				Î
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
MP20 TOP PATCH	301092	160x50x30mm	ANOD NATURAL	316 STAINLESS	TOP PATCH	PIVOT DOOR	Internal &
FITTING	301093	160x50x30mm	PSS	STEEL		HINGE DOOR	External
1	301094	160x50x30mm	SS				
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
MP22 TOP PATCH	301098	160x50x30mm	ANOD NATURAL	316 STAINLESS	TOP PATCH	PIVOT DOOR	Internal &
FITTING	301099	160x50x30mm	PSS	STEEL	FOR OVERHEAD	HINGE DOOR	External
	301100	160x50x30mm	SS		TRANSOM		
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		CLOSER		
MP24 TOP PIVOT	301130	120x25x3mm	SS	316 STAINLESS	TOP PIVOT	PIVOT DOOR	Internal &
0 9 0			ON REQUEST: POWDERCOAT	STEEL	WITH PLATE MOUNTING	HINGE DOOR	External
MP25 TOP PIVOT	500476	Full & Top: 60x13x13mm Threaded Rod: 40x7x7mm	SS	316 STAINLESS STEEL	TOP PIVOT THREADED ROD / WASHER /	PIVOT DOOR HINGE DOOR SLIDING DOOR	Internal & External
			ON REQUEST: POWDERCOAT		NUT	COMPONENT	
MP26 STANDARD	301132	100x46x4mm	SS	316 STAINLESS	воттом	PIVOT DOOR	Internal &
FLOOR PIVOT			ON REQUEST: POWDERCOAT	STEEL	PIVOT	HINGE DOOR *Max door weight 100kg	External
	500477	51x15x17mm	ANOD NATURAL		0700		
MP28 TRANSOM MOUNT STOP	500477	5121521/1111		316 STAINLESS STEEL	STOP – SINGLE DOOR	PIVOT DOOR HINGE DOOR	Internal & External
1.			ON REQUEST: POWDERCOAT		50MM		
MP32 FLOOR	301007	40x32mm	PSS	316 STAINLESS	STOP	PIVOT / HINGE	Internal &
MOUNT STOP	301008	40x32mm	SS	STEEL		DOOR	External
						SLIDING DOOR	
MP33 WALL	301483	75x16mm	PSS	316 STAINLESS	STOP	PIVOT / HINGE	Internal &
MOUNT STOP	301484	75x16mm	SS	STEEL		DOOR	External
1			ON REQUEST: POWDERCOAT			SLIDING DOOR	

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HARDWARE





Patch Fittings



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MP34	500434	60x35x3mm	ANOD NATURAL	316 STAINLESS	OVERPANEL	PIVOT DOOR	Internal &
OVERPANEL TO WALL PATCH	500436	60x35x3mm	PSS	STEEL	TO WALL	HINGE DOOR	External
FITTING KIT *Includes Backplate	500296	60x35x3mm	SS		PATCH		
and CSK Socket Screw		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
	300044	KIT INCLUDES:	ANOD NATURAL				
@ #	301273	BACKPLATE M8 X20MM SCREW	SS				
MP40	301107	217x105x30mm	ANOD NATURAL	316 STAINLESS	OVERPANEL	PIVOT DOOR	Internal &
OVERPANEL TO SIDE PANEL	301108	217x105x30mm	PSS	STEEL	TO SIDE PANEL PATCH	HINGE DOOR	External
PATCH FITTING	301109	217x105x30mm	SS				
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
MP41	301110	LEFT HAND	ANOD NATURAL	316 STAINLESS	OVERPANEL	PIVOT DOOR	Internal &
OVERPANEL TO SIDE PANEL	301111	LEFT HAND	SS	STEEL	TO SIDE PANEL WITH	HINGE DOOR	External
WITH FIN PATCH FITTING	301984	LEFT HAND	PSS		FIN PATCH		
	301113	RIGHT HAND	ANOD NATURAL				Ц Ч
1	301114	RIGHT HAND	SS				
	301112	RIGHT HAND	PSS				
		217x105x30mm INCLUDING OUTER LEG 217x105x140mm GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
	004447	105 105 00					
MP61 OVERPANEL TO	301117	105x105x30mm	ANOD NATURAL	316 STAINLESS STEEL	OVERPANEL TO SIDE	PIVOT DOOR HINGE DOOR	Internal & External
SIDE PANEL WITH OPTIONAL STOP	301118	105x105x30mm	PSS		PANEL WITH		n l
PATCH FITTING	301119	105x105x30mm GLASS THICKNESS:	SS ON REQUEST: POWDERCOAT		OPTIONAL STOP PATCH		цш !П
		10-12mm					
MP70	301120	115x50x25mm	ANOD NATURAL	316 STAINLESS	OVERPANEL	PIVOT DOOR	Internal &
OVERPANEL WITH TWO	301121	115x50x25mm	PSS	STEEL	WITH TWO OPTIONAL	(WITH TWO	External
OPTIONAL STOPS PATCH FITTING	301122	115x50x25mm	SS		STOPS PATCH	STOPS SUITS DOUBLE	Ψ
			ON REQUEST: POWDERCOAT			DOORS)	ĺ

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Patch Locks

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MP100 BOTTOM	500437		ANOD NATURAL	316 STAINLESS	PATCH LOCK	воттом	Internal &
PATCH LOCK	500436	155x50x30mm	PSS	STEEL	TATOTLEGER	PATCHLOCK	External
*Two Versions available Pin Lock, or Tough Lock	500464	Tough Lock	SS			*Includes Cylinders	r fn
E In	500459		ANOD NATURAL			and keeper.	Ψ
How How	500460	155x50x30mm Pin Lock	PSS				
	500461	TITLOCK	SS				
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
MP200 CENTRE	501170	EURO STYLE	ANOD NATURAL	316 STAINLESS	PATCH LOCK	CENTRE	Internal &
PATCH LOCK *Includes Cylinders	501172	DOUBLE CYLINDERS	PSS	STEEL		PATCH LOCK	External
	501771	163x50x30mm	SS			*Includes Cylinders	l m
	500297	EURO STYLE	ANOD NATURAL				
- e -	500465	CYLINDERS & TURN	PSS				
C Man	500435	163x50x30mm	SS				
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
MP220 CENTRE PATCH KEEPER	301101	162x50x30mm	ANOD NATURAL	316 STAINLESS	PATCH LOCK	CENTRE	Internal &
PAICH KEEPER	301102	162x50x30mm	SS	STEEL	KEEPER	PATCH KEEPER	External
	301103	162x50x30mm	PSS				Ш
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
MK240 TOUGH	300873	120x25x2mm	PSS	316 STAINLESS			Internal &
LOCK KEEPER	300872	120x25x2mm	SS	STEEL	SUITS COMPONENT	TRANSOM MULLION	External
					500437 500436 500464	OR GROUND INSTALLATIONS	
MK250 PIN LOCK	300874	75x25x2mm	PSS	316 STAINLESS	KEEPER	FOR	Internal &
KEEPER	300875	75x25x2mm	SS	STEEL	SUITS COMPONENT	TRANSOM MULLION	External
					500459 500460 500461	OR GROUND INSTALLATIONS	
DC110 EURO	300426	70x33x17mm	PSS	316 STAINLESS	DOUBLE	LOCK	Internal &
	301973	70x33x17mm	SS	STEEL	CYLINDER SUITS COMPONENT 500437 500436 500459 500460 500460 500461	CYLINDER	External
CT110 EURO	301856	87x32x17mm	PSS	316 STAINLESS	CYLINDER &	LOCK	Internal &
CYLINDER & TURN	300425	87x32x17mm	SS	STEEL	TURN SUITS	CYLINDER	External
100					COMPONENT 500437 500436 500464 500459 500460		
SLIDE ON PATCH	300928	46x32x17mm	ANOD NATURAL	316 STAINLESS	PATCH LOCK	SLIDE ON	Internal &
				STEEL		CYLINDER LOCK	
SLIDE ON PATCH	300929	50x40x28mm	ANOD NATURAL	316 STAINLESS	PATCH LOCK	SLIDE ON	Internal &
				STEEL		BOLT LOCK	

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HARDWARE



Patch Fitting Individual Components



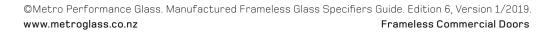
Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
CP10 CP20 CP22	300070	160x50mm	ANOD NATURAL	316 STAINLESS	PATCH COVER	REPLACEMENT	PATCH
COVER PLATE (Front & Back Set)	300371	160x50mm	PSS	STEEL	PLATES	PARTS	FITTINGS
	300372	160x50mm	SS			SUITS	
			ON REQUEST: POWDERCOAT			COMPONENT MP10, MP20, MP22 PATCH FITTINGS	
CP34	300382	162x50mm	ANOD NATURAL	316 STAINLESS	PATCH COVER	REPLACEMENT	PATCH
COVER PLATE (Front & Back Set)	300383	162x50mm	PSS	STEEL	PLATES	PARTS	FITTINGS
	300384	162x50mm	SS			SUITS	
			ON REQUEST: POWDERCOAT			COMPONENT MP34	
CP40	300385		ANOD NATURAL	316 STAINLESS	PATCH COVER	REPLACEMENT	PATCH
COVER PLATE (Front & Back Set)	300386	217X105mm 217x50mm	PSS	STEEL	PLATES	PARTS	FITTINGS
	300387		SS			SUITS	
-			ON REQUEST: POWDERCOAT			COMPONENT MP40	
CP41 LH/RH	300388		ANOD NATURAL	316 STAINLESS	PATCH COVER	REPLACEMENT	PATCH
COVER PLATE (Front & Back Set)	300389		PSS	STEEL	PLATES	PARTS	FITTINGS
(300390	217X105mm	SS			SUITS	
	302158	217x50mm 110x50mm	ANOD NATURAL			COMPONENT MP41	
	301948		PSS				
	301949		SS				
			ON REQUEST: POWDERCOAT				
C61	300391	105x50mm	ANOD NATURAL	316 STAINLESS	PATCH COVER	REPLACEMENT	PATCH
COVER PLATE (Front & Back Set)	300392	105x50mm	PSS	STEEL	PLATES	PARTS	FITTINGS
	300393	105x50mm	SS			SUITS COMPONENT	
			ON REQUEST: POWDERCOAT			MP61	
CP70	300394	115x50mm	ANOD NATURAL	316 STAINLESS	PATCH COVER	REPLACEMENT	PATCH
COVER PLATE (Front & Back Set)	300395	115x50mm	PSS	STEEL	PLATES	PARTS	FITTINGS
	300396	115x50mm	SS			SUITS	
			ON REQUEST: POWDERCOAT			COMPONENT MP70	
CP100	300373	115x50mm	ANOD NATURAL	316 STAINLESS	PATCH COVER	REPLACEMENT	PATCH
COVER PLATE (Front & Back Set)	300374	115x50mm	PSS	STEEL	PLATES (BOTTOM)	PARTS	FITTINGS
	300375	115x50mm	SS			SUITS	
• • -			ON REQUEST: POWDERCOAT			COMPONENT MP100	



Patch Fitting Individual Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
CP200	300376	163x50mm	ANOD NATURAL	316 STAINLESS	PATCH COVER	REPLACEMENT	PATCH
COVER PLATE (Front & Back Set)	300377	163x50mm	PSS	STEEL	PLATES (CENTRE)	PARTS	FITTINGS
	300378	163x50mm	SS			SUITS COMPONENT	
1 1 1			ON REQUEST: POWDERCOAT			MP200	
COVER PLATE	300379	162x50mm	ANOD NATURAL	316 STAINLESS	PATCH COVER	REPLACEMENT	PATCH
(Front & Back Set)	300380	162x50mm	PSS	STEEL	PLATES (CENTRE	PARTS	FITTINGS
	300381	162x50mm	SS		KEEPER)	SUITS	
			ON REQUEST: POWDERCOAT			COMPONENT MP220	
IS10 PATCH	300828	75x26mm		FORGED	INSERT AND	REPLACEMENT	PATCH
FITTING INSERT AND SCREWS					SCREWS	PARTS	FITTINGS
						SUITS COMPONENT MP20	
IS20 PATCH	300829	70x26mm		FORGED	INSERT AND	REPLACEMENT	PATCH
FITTING INSERT AND SCREWS	FITTING INSERT				SCREWS	PARTS	FITTINGS
						SUITS COMPONENT MP22	
IS22 PATCH	300830	76x19mm		FORGED	INSERT AND	REPLACEMENT	PATCH
FITTING INSERT AND SCREWS					SCREWS	PARTS	FITTINGS
-						SUITS COMPONENT MP34, MP40 & MP41	
IS40 PATCH	300831	70x26mm		FORGED	INSERT AND	REPLACEMENT	PATCH
FITTING INSERT AND SCREWS					SCREWS	PARTS	FITTINGS
Te						SUITS COMPONENT MP618 MP70	
IS70 PATCH	300832	31x29mm		FORGED	INSERT STOP	REPLACEMENT	PATCH
FITTING INSERT STOP						PARTS	FITTINGS
22							







Door Rails and Componentry



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
DOOR RAIL	500484	10mm	ANOD NATURAL	ALUM	воттом	PIVOT DOOR	Internal &
MR10*	500485	12mm	ANOD NATURAL		PIVOTING RAIL	HINGE DOOR	External
*Per Metre	500486	15mm	ANOD NATURAL		NON LOCKING		
	500487	19mm	ANOD NATURAL				ц Ш Ш
	500488	10mm	PSS				
	500489	12mm	PSS				
0	500490	15mm	PSS				
	500491	19mm	PSS				
	500492	10mm	SS				
	500493	12mm	SS				
	500494	15mm	SS				
	500495	19mm	SS				
		NON LOCKING	ON REQUEST: POWDERCOAT				
		GLASS THICKNESS: 10-19mm					
DOOR RAIL	500496	10mm	ANOD NATURAL	316 STAINLESS	TOP PIVOTING	PIVOT DOOR	Internal &
MR20*	500497	12mm	ANOD NATURAL	STEEL	RAIL NON LOCKING	HINGE DOOR	External
*Per Metre	500498	15mm	ANOD NATURAL		LUCKING		l m l
	500499	19mm	ANOD NATURAL				Ψ
0	500500	10mm	PSS				
1	500501	12mm	PSS				
	500502	15mm	PSS				
	500503	19mm PSS					
	500504	10mm	SS				
	500505	12mm	SS				
	500506	15mm	SS				
	500507	19mm	SS				
		NON LOCKING	ON REQUEST:				
		GLASS THICKNESS: 10-19mm	POWDERCOAT				
DOOR RAIL	500508	10mm	ANOD NATURAL	316 STAINLESS	воттом	PIVOT DOOR	Internal &
MR30*	500509	12mm	ANOD NATURAL	STEEL	PIVOTING RAIL LOCKING	HINGE DOOR	External
*Per Metre	500510	15mm	ANOD NATURAL		LUCKING		
	500511	19mm	ANOD NATURAL				цШ Ш
	500512	10mm	PSS				
Le l	500513	12mm	PSS				
0	500514	15mm	PSS				
9	500515	19mm	PSS				
	500516	10mm	SS				
	500517	12mm	SS				
	500518	15mm	SS				
	500519	19mm	SS				
	300876	Keeper (Half Round)	ANOD NATURAL				
	300877	Keeper (Quarter Round)	ANOD NATURAL				
		LOCKING GLASS THICKNESS: 10-19mm	ON REQUEST: POWDERCOAT				

NOTE: For Locking Rails specify cylinder Type: DC – Double cylinders, SC - Single Cylinder, CT Cylinder Turn.



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Door Rails and Componentry



3

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
DOOR RAIL	500520	10mm	ANOD NATURAL	ALUM	TOP PIVOTING	PIVOT DOOR	Internal &
MR40*	500521	12mm	ANOD NATURAL		RAIL LOCKING	HINGE DOOR	External
*Per Metre	500522	15mm	ANOD NATURAL				m
	500523	19mm	ANOD NATURAL				цул С
0	500524	10mm	PSS				
. Ph	500525	12mm	PSS				
	500526	15mm	PSS				
	500527	19mm	PSS				
	500528	10mm	SS				
	500529	12mm	SS				
	500530	15mm	SS				
	500531	19mm	SS				
	300876	Keeper (Half Round)	ANOD NATURAL				
	300877	Keeper (Quarter Round)	ANOD NATURAL				
		LOCKING GLASS THICKNESS: 10-19mm	ON REQUEST: POWDERCOAT				
DOOR RAIL	500532	10mm	ANOD NATURAL	316 STAINLESS	воттом	SLIDING DOOR	Internal &
MR50*	500533	12mm	ANOD NATURAL	STEEL	SLIDING RAIL	SLIDING DOOR	External
*Per Metre	500534	15mm	ANOD NATURAL		NON LOCKING		
	500535	19mm	ANOD NATURAL				
	500536	10mm	PSS				
1	500537	12mm	PSS				
	500538	15mm	PSS				
	500539	19mm	PSS				
	500540	10mm	SS				
	500541	12mm	SS				
	500542	15mm	SS				
	500543	19mm	SS				
		NON LOCKING GLASS	ON REQUEST: POWDERCOAT				
		THICKNESS: 10-19mm					
DOOR RAIL MR60*	500544	10mm	ANOD NATURAL	316 STAINLESS STEEL	TOP SLIDING RAIL NON	SLIDING DOOR	Internal & External
	500545	12mm	ANOD NATURAL	SIEEL	LOCKING		
*Per Metre	500546	15mm	ANOD NATURAL				
	500547	19mm	ANOD NATURAL				
0	500548	10mm	PSS				
	500549	12mm	PSS				
	500550	15mm	PSS				
	500551	19mm	PSS				
	500552	10mm	SS				
	500553	12mm	SS				
	500554	15mm	SS				
	500555	19mm	SS				
		NON LOCKING GLASS THICKNESS: 10-19mm	ON REQUEST: POWDERCOAT				

NOTE: For Locking Rails specify cylinder Type: DC – Double cylinders, SC - Single Cylinder, CT Cylinder Turn.



Door Rails and Componentry



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
DOOR RAIL	500556	10mm	ANOD NATURAL	ALUM	воттом	SLIDING DOOR	Internal &
MR70*	500557	12mm	ANOD NATURAL		SLIDING RAIL		External
*Per Metre	500558	15mm	ANOD NATURAL		LOCKING		
	500559	19mm	ANOD NATURAL				
	500560	10mm	PSS				
	500561	12mm	PSS				
0	500562	15mm	PSS				
	500563	19mm	PSS				
	500564	10mm	SS				
	500565	12mm	SS				
	500566	15mm	SS				
	500567	19mm	SS				
	300876	Keeper (Half Round)	ANOD NATURAL				
	300877	Keeper (Quarter Round)	ANOD NATURAL				
		LOCKING GLASS THICKNESS: 10-19mm	ON REQUEST: POWDERCOAT				
DOOR RAIL	500568	10mm	ANOD NATURAL	316 STAINLESS	SIDE PANEL	PIVOT DOOR	Internal &
MR80*	500569	12mm	ANOD NATURAL	STEEL	RAIL		External
*Per Metre	500570	15mm	ANOD NATURAL		*Supplied with		
	500571	19mm	ANOD NATURAL		CS25 Channel	SLIDING DOOR	ци —
	500572	10mm	PSS				
	500573	12mm	PSS				ا نا
0	500574	15mm	PSS				
	500575	19mm	PSS				
	500576	10mm	SS				
	500577	12mm	SS				
	500578	15mm	SS				
	500579	19mm	SS				
		NON LOCKING GLASS THICKNESS: 10-19mm	ON REQUEST: POWDERCOAT				

NOTE: For Locking Rails specify cylinder Type: DC – Double cylinders, SC - Single Cylinder, CT Cylinder Turn.

3

For Locking Door Rails

DC- Double Cylinders, SC – Single Cylinder, CT – Cylinder & Turn (MR30, MR40, MR70)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SINGLE CYLINDER	300428	30x36mm Lockwood 590 Cylinders	SC	STAINLESS STEEL	SINGLE CYLINDER *Includes Screw pack	LOCK CYLINDER	Internal O External
TURN KNOB CYLINDER	301019	30x36mm (Including Lock Knob 30 X52mm) Lockwood 590 Cylinders	SC	STAINLESS STEEL	CYLINDER & TURN *Includes Screw pack	LOCK CYLINDER	
ESCUTCHEON ROSE	301209	60X31mm Lockwood 590 Cylinders Rose	SS	STAINLESS STEEL	ESCUTCHEON ROSE	ROSE SUITS COMPONENT 300428 301019	
KEEPER	300876	143x28x41mm Lockwood 540 Cylinders	ANOD NATURAL	STAINLESS STEEL	GROUND BASED	LOCK KEEPER	

Select Ground Keeper.

IF USING A DORMAKABA OVERHEAD TRANSOM CLOSER (RTS85):

The Top Pivoting Rail will require an extra conversion Insert (RTS85 RAIL INSERT sku 301270) Used with MR20 \otimes MR40 Door Rails.

Floor Guides

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
FLOOR GUIDE BLACK PVC	301009	60x26x4mm	BLACK	PVC	SLIDING RAIL FLOOR GUIDE	GUIDE	Internal & External
							-
FLOOR GUIDE	300967	35x49x26mm	ANOD NATURAL	ALUM	SLIDING RAIL	ADJUSTABLE	Internal &
GLASS DOOR		GLASS THICKNESS: 8-12mm			FLOOR GUIDE FOR GLASS DOORS	GUIDE	External







Ozone Plus EN3 (Standard Strength Hydraulic Patch)

Ozone Plus is the latest and one of the most innovative Bottom Patch fittings for frameless glass doors that comes with an in-built hydraulic system. The products under this range do not require any cavity to be made in the floor for installation. Hence, no digging, no cutting of the floor is required, making the installation quick & easy.

The Ozone Hydraulic Patch Fitting is surface mounted directly to the floor making it easy to install and thus a more cost effective option for doors. Direct mounting to the floor is done with an adjustable base plate and this removes the need for pre-casting or cutting floor spring boxes, which is a slow messy process creating concrete dust and potentially weakening the floor slab.

The Ozone's innovation is in the hydraulic closer mechanism which fits within the patch fitting, and allows closing adjustment like a floor spring. The closer mechanism can be non hold open or be 90 degree hold open.

The patch fitting is slightly larger than a normal patch fitting at 190 x 70mm, but does not look out of place when used in typical frameless glass entry. The patch fitting comes with a 304 satin stainless steel covers for internal use. The Ozone Hydraulic Patch Fitting is suitable for internal doors up to 1000mm wide made from 8 to 12mm TEMPAFLOAT® Toughened Safety Glass (TSG) up to 100kg maximum weight.

3



Key Features

- Suitable door weight: Max 100kg.
- Suitable door width: 750-1000mm.
- Suitable door thickness: 8-12mm TEMPAFLOAT® Toughened Safety Glass.
- ▶ Ambient temperature: 20°C +50°C.
- ▶ Hold open 90° (Non Hold Open also available).
- ▶ No need to have the pre-set on the floor.
- Easy installation with base seat adjustable ±3mm backward and forward ±3mm left and right and 4° alignment adjustment.
- ▶ Double Action 150° Movement.
- > 2 Stage Speed Adjustment.
- The Ozone Hydraulic Patch Fitting is a new innovation for self closing frameless internal glass doors.

Types

- Ozone FH-100-HO Hold open 90 degree.
- Ozone FH-100-NHO Non hold open.

Material Finish

- Satin or Polished Stainless Steel.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Scope of Use

- Designed for use in Germ and Bacteria Free environments such as hospitals and restaurants.
- Ensures no dust/water accumulation under the door or below the floorspring plate.
- Extremely useful in places requiring regular floor washing and mopping.

Support Inquiries

 Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Ozone EN3 – FH100

SUITABLE FOR INTERNAL ONLY. MAXIMUM Door weight 100kg. Suitable for Door Width 750~1000mm.

Nominal Glass					MA	XIMU	M Doo	or Hei	ights S	Span	(mm)	for Wi	ind Zo	ones				
Thickness (mm)			.5kPa	Lo	w 0.72	kPa	Medium 0.96 kPa		High 1.36 kPa		kPa	Very High 1.76 kPa		76 kPa	Extra High			
rinekness (ining	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
8mm TEMPAFLOAT®		1000	Yes			No			No			No			No			No
10mm TEMPAFLOAT®	2400	1000	Yes			No			No			No			No			No
12mm TEMPAFLOAT®	2800	1000	Yes			No			No			No			No			No



Ozone EN3 (Standard Strength Hydraulic Patch)



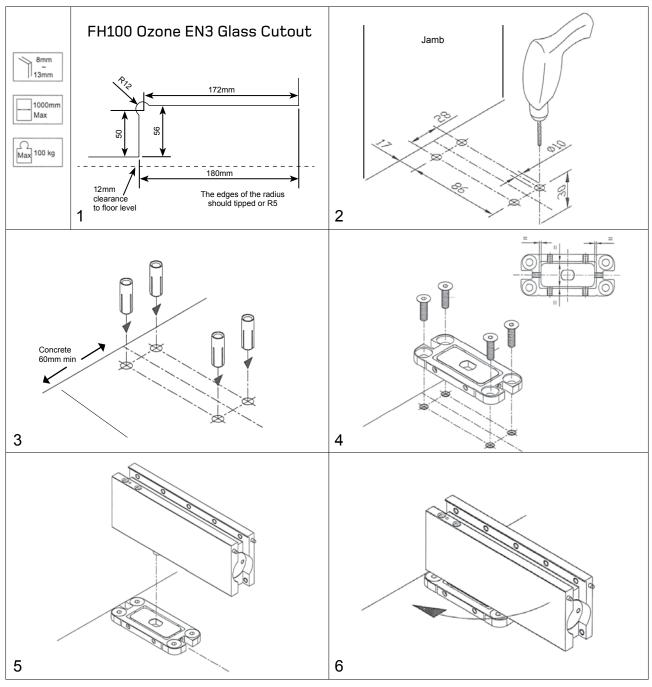
Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
FH100 OZONE EN3	301076	90 DEGREE HOLD OPEN	SS	304/316 STAINLESS	HYDRAULIC FLOOR	PIVOT DOOR HINGE DOOR	Internal 8 External
(Standard Strength Hydraulic Patch)	301077	NON HOLD OPEN	SS	STEEL	MOUNTED PATCH FITTING		
	301762	90 DEGREE HOLD OPEN	PSS				
	301763	NON HOLD OPEN	PSS				
		GLASS THICKNESS: 8-12mm	ON REQUEST: POWDERCOAT				
FH100 OZONE	301075	186x71mm	SS	316 STAINLESS	COVER PLATE	REPLACEMENT	Internal &
COVER PLATE				STEEL		PARTS	External
BASEPLATE &	301640	110x47mm	SS	316 STAINLESS	BASE PLATE	REPLACEMENT	Internal &
COVERS To Suit Ozone FH100 / FH105SSS				STEEL	AND COVERS	PARTS	External
PATCH FITTING, 65 x 186 L Shape	301074	65X186X2.5mm	SS	316 STAINLESS STEEL	L SHAPE PLATE	PATCH FITTING	Internal & External
Plate for FH100 SSS				STEEL	PLATE	FITTING	External

(Standard patch fittings can accommodate 10-12mm glass only)





Ozone Plus EN3 Hydraulic Closers



Once the patch is at 90° to the base the gaskets can be added and the door slid onto the patch and clamped in place by tightening up the screws on the side.

The door speed and brake speed can then be adjusted to suit your requirements, then the cover caps clipped in place to complete the installation.



Installation / Fitting Instructions

Ozone Plus EN3 Hydraulic Closers

Product	Code	Description	Finish
	FH-100 HO 301076 SS 301762 PSS	Ozone Self Closing Hydraulic Patch 90° Hold Open	304 SS
	FH-100 NHO 301077 SS 301763 PSS	Ozone Self Closing Hydraulic Patch Non Hold Open	316 SS

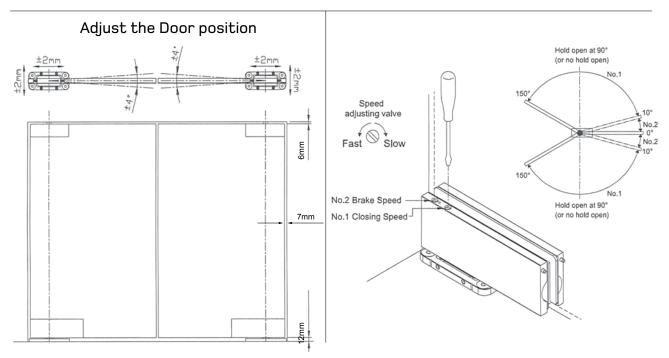
Self closing floor mounted patch fitting for internal Frameless Glass doors up to 1000mm wide.

Simple installation with four screw fixings into any floor. Adjustable base plate for easy alignment of the door in either direction shown in diagram below.

Suitable for single or double action doors. Used in conjunction with standard MP20 top patch fitting. Two speed closing adjustment as shown below.

Suits toughened frameless glass doors from 8mm - 12mm thick with a maximum door weight of 100kg's.

Not recommended for use with Maglocks.





Ozone Plus EN5 (High Strength Hydraulic Patch)

Ozone Plus is the latest and one of the most innovative Bottom Patch fittings for frameless glass doors that comes with an in-built hydraulic system. The products under this range do not require any cavity to be made in the floor for installation. Hence, no digging, no cutting of the floor is required, making the installation quick & easy.

The Ozone Hydraulic Patch Fitting is surface mounted directly to the floor making it easy to install and thus a more cost effective option for doors. Direct mounting to the floor is done with an adjustable base plate and this removes the need for pre-casting or cutting floor spring boxes, which is a slow messy process creating concrete dust and potentially weakening the floor slab.

The Ozone's innovation is in the hydraulic closer mechanism which fits within the patch fitting, and allows closing adjustment like a floor spring. The closer mechanism can be non hold open or be 90 degree hold open.

The Ozone HS patch fitting is slightly larger than a normal ozone patch fitting and is 196 x 80mm, but does not look out of place when used in typical frameless glass entry. The patch fitting comes with 316 satin stainless steel covers.

The Ozone Hydraulic Patch Fitting is suitable for internal up to 1250mm wide maximum and external doors up to 1000mm wide maximum, made from 10 to 15mm TEMPAFLOAT® Toughened Safety Glass (TSG) up to 100kg maximum weight.

3



Key Features

- Suitable door weight: Max 100kg.
- Suitable door width: 750-1250mm (Internal 1250mm max) (External 1000mm Max)
- Suitable door thickness: 10-15mm Toughened Safety Glass
- Ambient temperature: 20°C~+50°C
- ► Hold open 90° (Non Hold Open also available)
- ▶ No need to have the pre-set on the floor
- Easy installation with base seat adjustable ±3mm backward and forward ±3mm left and right and 4° alignment adjustment
- ▶ Double Action 150° Movement
- > 2 Stage Speed Adjustment.
- The Ozone HS is a high strength hydraulic patch fitting for self closing frameless glass doors.

Types

- Ozone FH-105-HO Hold open 90 degree.
- Ozone FH-105-NHO Non hold open.

Material Finish

- Satin or Polished Stainless Steel
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Scope of Use

- Designed for use in Germ and Bacteria Free environments such as hospitals and restaurants.
- Ensures no dust/water accumulation under the door or below the floorspring plate.
- Extremely useful in places requiring regular floor washing and mopping.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Ozone EN5 – FH105

SUITABLE FOR INTERNAL AND EXTERNAL DOORS. MAXIMUM Door weight 100kg. Suitable for Door Width 750~1250mm.

Nominal Glass					MA	хіми	M Doo	or Hei	ights S	Span	(mm)	for Wi	ind Zo	ones				
Thickness (mm)	Inte	rnal O	.5kPa	Lo	w 0.72	kPa	Medi	ium 0.9	96 kPa	Hig	h 1.36	kPa	Very	High 1.	76 kPa	E	xtra H	igh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	1250	Yes	2200	1000	No	2000	1000	No	1800	1000	No	NA	NA	No			
12mm TEMPAFLOAT®	2800	1190	Yes	2600	1000	No	2400	1000	No	2200	1000	No	2000	1000	No			
15mm TEMPAFLOAT®	3600	740	Yes	3400	784	Yes	3200	833	Yes	2800	952	Yes	2400	1000	Yes			



Ozone EN5 (High Strength Hydraulic Patch)



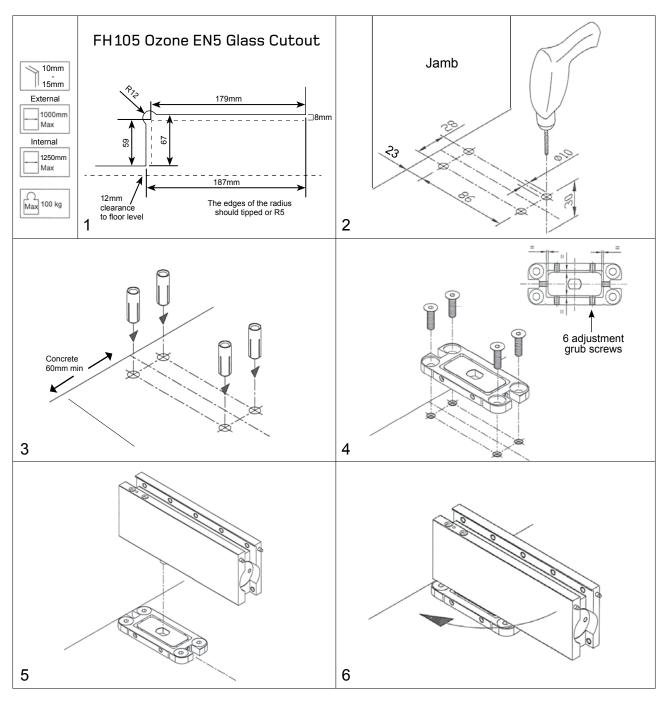
Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
FH105 OZONE EN5	301079	90 DEGREE HOLD OPEN	SS	316 STAINLESS STEEL	HYDRAULIC FLOOR	PIVOT DOOR HINGE DOOR	Internal & External
(Standard Strength Hydraulic Patch)	301080	NON HOLD OPEN	SS		MOUNTED PATCH FITTING		
	301764	90 DEGREE HOLD OPEN	PSS				
	301765	NON HOLD OPEN	PSS				
		GLASS THICKNESS: 8-12mm	ON REQUEST: POWDERCOAT				
FH105 OZONE	301078	196x80mm	SS	316 STAINLESS	COVER PLATE	REPLACEMENT	Internal &
EN5 COVER PLATE				STEEL		PARTS	External
BASEPLATE & COVERS To Suit	301640	110x47mm	SS	316 STAINLESS	BASE PLATE	REPLACEMENT	Internal &
Ozone FH100 / FH105SSS				STEEL	AND COVERS	PARTS	External
SP.							

(Standard patch fittings can accommodate 10-12mm glass only).





Ozone Plus EN5 Hydraulic Closers



Once the patch is at 90° to the base the gaskets can be added and the door slid onto the patch and clamped in place by tightening up the screws on the side.

The door speed and brake speed can then be adjusted to suit your requirements, then the cover caps clipped in place to complete the installation.



Installation / Fitting Instructions

Ozone Plus EN5 Hydraulic Closers

Product	Code	Description	Finish
	FH-105 HO 301079 SS 301764 PSS	Ozone High Strength Hydraulic Self Closing Patch 90° Hold Open	316 SS
	FH-105 NHO 301080 SS 301765 PSS	Ozone High Strength Hydraulic Self Closing Patch Non Hold Open	316 SS

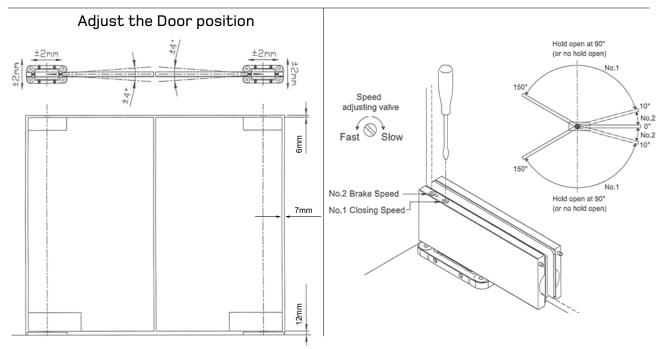
FH-105 Ozone high strength floor mounted patch fitting suitable for both internal and external doors.

Internal door max width = 1250mm External door max width = 1000mm

Simple installation with four screw fixings into any floor. Adjustable base plate for easy alignment of the door in either direction shown in diagram below.

Suitable for single or double action doors. Used in conjunction with standard MP20 top patch fitting. Two speed closing adjustment as shown below.

Suits toughened frameless glass doors from 10mm - 15mm thick with a maximum door weight of 100kg's. Not recommended for use with Maglocks.





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Metro MFX840 (Floor Spring) EN1-4

3

Designed to be used with Metro patch fittings and door rails. The Metro Floor Spring is a double-action floor spring which has been specially developed for toughened glass doors.

3



Key Features

- Suitable door weight: Max 100kg.
- Suitable door width: 750-1100mm.
- Suitable door thickness: 8-12mm Toughened Safety Glass.
- Ambient temperature: 20°C +50°C.
- Hold open 90° (Non Hold Open also available) Hold Open Angle 90°.
- Max Opening Angle 130°.
- Floor Box Dimension: 307mm x 108mm x 40mm.
- ▶ Double Action (also suitable for Single Action applications).
- Hydraulic Variable Speed Closing.
- ▶ Spring Strengths 15NM (Weak) & 25NW (Standard).
- ▶ No need to have the pre-set on the floor.
- Easy installation with base seat adjustable ±3mm backward and forward ±3mm left and right and 4° alignment adjustment.
- All Floor Springs supplied with Stainless Steel Cover Plate.
 * Extended spindles available on request.
 - (5mm, 10mm, 15mm, 20mm, 25mm, 30mm, 35mm, 40mm, 50mm)

Material Finish

- Satin or Polished Stainless Steel.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Scope of Use

Floor spring for double action doors, with hydraulic fully controlled closing from approx. 130°; including cement box and removable spindle insert.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Metro MFX840

SUITABLE FOR INTERNAL AND EXTERNAL DOORS. MAXIMUM Door weight 100kg. Suitable for Door Width 750-1100mm. Maximum width 1100mm.

Nominal Glass					MA	хіми	M Doo	or Hei	ights S	Span	(mm)	for Wi	ind Zo	ones				
Thickness (mm)	Inte	rnal O	.5kPa	Lo	w 0.72	kPa	Medi	um 0.9)6 kPa	Hig	h 1.36	kPa	Very	High 1.	76 kPa	E	xtra H	ligh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
8mm TEMPAFLOAT®			Yes															
10mm TEMPAFLOAT®	2400	1000	Yes	2200	1000	Yes	2000	1000	Yes	1800	1000	Yes	NA	NA	No			
12mm TEMPAFLOAT®	2800	1100	Yes	2600	1100	Yes	2400	1100	Yes	2200	1100	Yes	2000	1100	Yes			







Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MFX840 FLOOR SPRING	300548	15Nm 90 DEGREE HOLD OPEN	SS	316 STAINLESS STEEL	HYDRAULIC FLOOR MOUNTED	PIVOT DOOR HINGE DOOR	Internal & External
Hydraulic Patch	300549	NON HOLD OPEN	SS		PATCH FITTING		
	300546	25Nm 90 DEGREE HOLD OPEN	SS		*Supplied with std 5mm extended spindles		
	300547	NON HOLD OPEN	SS				
		GLASS THICKNESS: 8-12mm	ON REQUEST: POWDERCOAT				
		307 x 108 x 40mm					

(Standard patch fittings can accommodate 10-12mm glass only).



www.metroglass.co.nz

Metro MFX840 Floor Spring Individual Components

FLOOR SPRING SPINDLES 300545 5mm SS 300533 10mm SS STEEL SPING SPINDLES *Please specify if you require 0ffset 3 degrees for single action LH or RH 300540 20mm SS 3 3 3	Area	Application	Туре	Material	Finish	Sizes mm	Model	Product
SPINDLES 300545 5mm SS STATE SPINDLES *Please sport/yif 3 degrees for sigle action LH or RH 300540 20mm SS 300541 25mm SS 300542 40mm 3'' 300542 40mm SS 300543 50mm SS 3'' LH off set spindle 3'' 300543 50mm SS 316 STAINLESS BODY ONLY REPLACEMENT 1 MFX840 BODY ONLY 302009 307x108x40mm BLACK 316 STAINLESS STEEL BODY ONLY REPLACEMENT 1 MFX840 COVER PLATE 302009 307x108x40mm BLACK 316 STAINLESS STEEL FLOOR BOX REPLACEMENT 1 MFX840 COVER PLATE 301709 325x130mm SS 316 STAINLESS STEEL COVER PLATE REPLACEMENT 1 MFX840 COVER PLATE 301309 M5 X 12 SS STAINLESS STEEL SCREW PACK REPLACEMENT 1	Internal &	COMPONENT			SS	STD SPINDLE	300544	
300538 10mm SS 300539 15mm SS 300540 20mm SS 300541 25mm SS 300542 40mm SS 300543 50mm SS 300543 50mm SS 300543 50mm SS 300543 50mm SS 300544 40mm SS 300543 50mm SS 300544 40mm SS 300543 50mm SS 300544 50mm SS 300547 30098 280x85x25mm SS 316 STAINLESS BODY ONLY MFX840 302009 307x108x40mm BLACK MFX840 301709 325x130mm SS 316 STAINLESS STEL FLOOR BOX *External Component *External Component PARTS MFX840 301709 325x130mm SS STEEL STEEL COVER PLATE REP	External			STEEL	SS	5mm	300545	
300339 10mm SS 300540 20mm SS 300541 25mm SS 300542 40mm SS 300543 50mm SS 300543 50mm SS 300543 50mm SS 300543 50mm SS 300544 40mm SS 300547 40mm SS 300548 50mm SS 300549 300098 280x85x25mm SS 316 STAINLESS BODY ONLY REPLACEMENT PARTS 302009 307x108x40mm BLACK 302009 307x108x40mm BLACK 316 STAINLESS FLOOR BOX STEEL FLOOR BOX *External Component MFX840 301709 325x130mm SS 316 STAINLESS STEEL COVER PLATE MFX840 301309 M5 X 12 SS STAINLESS STEIL SCREW PACK REPLACEMENT PARTS	m	3 degrees for			SS	10mm	300538	
MFX840 FLOOR BOX 301709 325x130mm SS 301709 305x12 SS 301309 M5 X12 SS SCREW PACK 301309 M5 X12 MFX840 BODY ONLY 301309 M5 X12 301309 M5 X12 SS 301309 M5 X12 SS 301309 M5 X12 SS					SS	15mm	300539	1000
30054125mmSS30054240mmSS30054350mmSS30054350mmSS300098280x85x25mmSS316 STAINLESSBODY ONLYMFX840 FLOOR BOX302009307x108x40mmBLACKMFX840 FLOOR BOX302009307x108x40mmBLACKMFX840 FLOOR BOX301709325x130mmSSMFX840 COVER PLATE301709325x130mmSSMFX840 SCREW PACK301309M5 X 12SSSCREW PACK301309M5 X 12SSSCREW PACK301309M5 X 12SSSCREW PACKB01309M5 X 12SSSCREW PACKB01309M5 X 12SSSCREW PACKB01309M5 X 12SSSCREW PACKB01309M5 X 12SSSCREW PACKBCREW PACKBCREW PACKSCREW PACKBCREW PACKBCREW PACK	ίЦ	00			SS	20mm	300540	
30054240mmSS30054350mmSS30054350mmSSMFX840 BODY ONLY300098280x85x25mmSS300543300098280x85x25mmSS300543300098280x85x25mmSS300542300098280x85x25mmSS300542300098280x85x25mmSS30009307x108x40mmBLACK316 STAINLESS STEELBODY ONLY *Internal ComponentREPLACEMENT PARTSIMFX840 FLOOR BOX COVER PLATE301709325x130mmSS316 STAINLESS STEELCOVER PLATE STEELREPLACEMENT PARTSIMFX840 COVER PLATE301309M5 X 12SSSTAINLESS STEELSCREW PACKREPLACEMENT PARTSI					SS	25mm	300541	m /
Image: MFX840 BODY ONLY BODY ONLY300098280x85x25mmSS316 STAINLESS STEELBODY ONLY 		Li i oli set spindle			SS	40mm	300542	1
MFX840 BODY ONLY BODY ONLY300098280x85x25mmSS316 STAINLESS STEELBODY ONLY *Internal ComponentREPLACEMENT PARTSIMFX840 FLOOR BOX COVER PLATE302009307x108x40mmBLACK316 STAINLESS STEELFLOOR BOX *External ComponentREPLACEMENT PARTSIMFX840 COVER PLATE301709325x130mmSS316 STAINLESS STEELCOVER PLATE STEELREPLACEMENT PARTSIMFX840 SCREW PACK301309M5 X 12SSSTAINLESS STEELSCREW PACKREPLACEMENT PARTSI		3°			SS	50mm	300543	
BODY ONLY BODY ONLY PARTS PARTS Image: State of the		RH off set spindle						
$ \frac{MFX840}{FLOOR BOX} = \frac{302009}{100} = \frac{307\times108\times40mm}{100} = \frac{BLACK}{100} = \frac{316 \text{ STAINLESS}}{100} = \frac{FLOOR BOX}{100} = \frac{FLOOR BOX}{100$	Internal &		BODY ONLY		SS	280x85x25mm	300098	
MFX840 FLOOR BOX 302009 307x108x40mm BLACK 316 STAINLESS STEEL FLOOR BOX *External Component REPLACEMENT PARTS I MFX840 COVER PLATE 301709 325x130mm SS 316 STAINLESS STEEL COVER PLATE REPLACEMENT PARTS I MFX840 COVER PLATE 301709 325x130mm SS 316 STAINLESS STEEL COVER PLATE REPLACEMENT PARTS I MFX840 SCREW PACK 301309 M5 X 12 SS STAINLESS STEEL SCREW PACK REPLACEMENT PARTS I	External	PARIS	*Internal	SIEEL				BODTONLT
FLOOR BOX Image: State in the state i	Ψ		Component					CONTENS.
FLOOR BOX Image: State in the state i								
MFX840 COVER PLATE 301709 325x130mm SS 316 STAINLESS STEEL COVER PLATE REPLACEMENT PARTS I MFX840 COVER PLATE 301309 M5 X 12 SS STAINLESS STEEL SCREW PACK SCREW PACK REPLACEMENT I	Internal &		FLOOR BOX		BLACK	307x 108x40mm	302009	
COVER PLATE STEEL STEEL MFX840 SCREW PACK 301309 M5 X 12 SS STAINLESS SCREW PACK REPLACEMENT I	External	PARIS		STEEL				
COVER PLATE STEEL STEEL MFX840 SCREW PACK 301309 M5 X 12 SS STAINLESS SCREW PACK REPLACEMENT I								
MFX840 301309 M5 X 12 SS STAINLESS SCREW PACK REPLACEMENT I	Internal & External		COVER PLATE		SS	325x130mm	301709	
SCREW PACK STEEL STEEL PARTS								-
SCREW PACK 3 x Units in STEEL PARTS	Internal &		SCREW PACK		SS	M5 X 12	301309	
De als	External	PARTS		STEEL				SCREW PACK
Pack						Pack		**

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HARDWARE







Dormakaba Floor Springs (BTS84, BTS75 (EN1-4), BTS84 (EN2, EN4), RTS85 (Transom Concealed Door Closer) (EN1-4)

Whether standard, narrow or wide, whether LH, RH, or single or double action – dormakaba BTS 80 and BTS 75 door springs are designed for all types of door. A comprehensive program of accessories ensures that they can be used successfully with a wide variety of door constructions and floor coverings. Thanks to a wide range of functions, which can be individually selected to suit different requirements, dormakaba BTS 80 and BTS 75 floor springs offer maximum reliability and quality.

There are four systems:

Dormakaba BTS84

The BTS84 is a double-action floor spring which has been specially developed for toughened glass doors.

Key Features

- Concealed unit for almost invisible installation.
- Minimum floor recess dimensions.
- Proven, robust unit for door weights up to 100 kg.

Scope of Use

Floor spring for double action doors, with hydraulic fully controlled closing from approx. 130°; including cement box and removable spindle insert.

Material Finish

- Satin Stainless Steel.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Support Inquiries

 Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz.



Dormakaba BTS75 (EN1-4)

The BTS75 is a highly adaptable floor spring suitable for all standard single-, and double-action doors with widths up to 1100 mm, with its closing force individually regulated by means of an adjustment screw.

Key Features

- ▶ For single and double-action doors.
- Universal application range.
- ▶ Adjustable Closing Force.
- Concealed installation.
- Maximum ease of use.
- Proven, robust unit for door weights up to 120 kg.

Scope of Use

Universal floor spring, non-handed unit suitable for LH and RH single and double action doors up to 120 kg leaf weight, with adjustable spring strength (size EN 1 – 4) and closing speed, with closing action operational from approx. 175°. Featuring hydraulically fully controlled closing cycle and backcheck. Including cement box.

Material Finish

- ▶ Satin Stainless Steel.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz.





Dormakaba BTS80 (EN2, EN4)

The BTS80 Series of floor-concealed door closers offer adaptability to almost any installation. The closer's compact body permits its use where a larger closer would be prohibitive. Versatility allows installation in thin slab concrete subfloor construction. A wide selection of interchangeable spindles makes the BTS80 suitable for virtually any floor covering or threshold application.

Key Features

- Concealed installation.
- Fixed Spring Sizes.
- Non-handed for single and double-acting doors.
- Mechanical backcheck.
- Proven, robust unit for door weights up to 300 kg.
- Max 1370mm internal.
- ▶ Max 1219mm external.

Scope of Use

Universal non-handed floor spring conforming to DIN EN 1154 for single and double action doors up to max.300 kg leaf weight. With adjustable closing speed and closing action from approx. 175°, with hydraulically fully controlled closing cycle and backcheck. With integral pressure compensation feature for temperature-independent hold-open between 75° and 175° (removable). With adjustable hold-open start point and delayed action (end of delayed action range adjustable between 75° and 105°). Including cement box.

Material Finish

- ▶ Satin Stainless Steel.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@ metroglass.co.nz.

Dormakaba RTS85 (Transom Concealed Door Closer) (EN1–4)

The DORMA RTS85 transom concealed door closer offers a solution for installations where door control must be provided without disturbing the aesthetic appearance of the door. Complete with the choice of three spring strength sizes, hold open and non hold open variants, back check function and our wide range of accessories makes the RTS 85 the perfect choice for shop fronts, office partitions and frameless glass door applications.

Key Features

- ▶ For single and double action doors.
- Door widths up to 1100 mm.
- Backcheck function as standard.
- ▶ Wide range of accessories for almost every configuration.
- Concealed in the door frame.
- Proven, robust unit for door weights up to 110 kg. (For applications involving particularly heavy or wide doors, and doors which have to close against wind resistance please consult MFG Technical Team Members).

Scope of Use

Ideal for pivot doors in partition fit outs, shop fronts, frame less glass doors and pivoting fire doors. Whilst typically used for double action doors it is also suitable for single action doors. The majority of preparation can be accomplished by the fabricator prior to installation and with no floor preparation required it leaves minimal on-site work necessary. A comprehensiveline of accessories is available to accommodate virtually any door and frame configuration.

Material Finish

- Satin Stainless Steel.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz.





PATCH FITTINGS: (HARDWARE LIMITATIONS)

Dorma BTS84

SUITABLE FOR INTERNAL AND EXTERNAL DOORS. MAXIMUM Door weight 100kg. Suitable for Door Width 750~1100mm. Maximum width 1100mm.

Nominal Glass					MA	хіми	M Doo	or Hei	ights S	Span	(mm) ⁻	for Wi	nd Zc	ones				
Thickness (mm)	Inte	rnal O.	.5kPa	Lo	w 0.72	kPa	Medi	um 0.9	96 kPa	Hig	h 1.36	kPa	Very	High 1.	76 kPa	E	xtra H	igh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	1000	Yes	2200	1000	Yes	2000	1000	Yes	1800	1000	Yes	NA	NA	No			
12mm TEMPAFLOAT®	2800	1100	Yes	2600	1100	Yes	2400	1100	Yes	2200	1100	Yes	2000	1100	Yes			
15mm TEMPAFLOAT®	3600		No	3400		No	3200		No	2800		No	2400		No			
19mm TEMPAFLOAT®	4000		No	4000		No	4000			3400			3200					

Dorma BTS75

SUITABLE FOR INTERNAL AND EXTERNAL DOORS. MAXIMUM Door weight 120kg. Suitable for Door Width 750~1100mm. Maximum width 1100mm.

Nominal Glass					MA	XIMU	M Doo	or Hei	ights S	Span	(mm)	for Wi	ind Zo	ones				
Thickness (mm)	Inte	rnal O	.5kPa	Lo	w 0.72	kPa	Medi	um 0.9	96 kPa	Hig	jh 1.36	kPa	Very	High 1.	76 kPa	E	xtra H	ligh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	1100	Yes	2200	1100	Yes	2000	1100	Yes	1800	1100	Yes	NA	NA	No			
12mm TEMPAFLOAT®	2800	1100	Yes	2600	1100	Yes	2400	1100	Yes	2200	1100	Yes	2000	1100	Yes			
15mm TEMPAFLOAT®	3600	888	Yes	3400	941	Yes	3200	1000	Yes	2800	1100	Yes	2400	1100	Yes			
19mm TEMPAFLOAT®	3368	750	Yes	3368	750	Yes	3368	750	Yes	3368	750	Yes	3200	789	Yes			

Dorma BTS80

SUITABLE FOR INTERNAL AND EXTERNAL DOORS. MAXIMUM Door weight 300kg. Suitable for Door Width 750~1370mm. Maximum width 1370mm.

Nominal Glass					MA	хіми	M Doo	or Hei	ights S	Span	(mm)	for Wi	ind Zo	ones				
Thickness (mm)	Inte	rnal O.	.5kPa	Lo	w 0.72	kPa	Medi	um 0.9)6 kPa	Hig	h 1.36	kPa	Very	High 1.	76 kPa	E	xtra H	ligh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	1370	Yes	2200	1219	No	2000	1219	Yes	1800	1219	Yes	NA	NA	No			
12mm TEMPAFLOAT®	2800	1370	Yes	2600	1219	No	2400	1219	Yes	2200	1219	Yes	2000	1219	Yes			
15mm TEMPAFLOAT®	3600	1370	Yes	3400	1219	Yes	3200	1219	Yes	2800	1219	Yes	2400	1219	Yes			
19mm TEMPAFLOAT®	4000	1370	Yes	4000	1219	Yes	4000	1219	Yes	3400	1219	Yes	3200	1219	Yes			

Dorma RTS85

SUITABLE FOR INTERNAL AND EXTERNAL DOORS. MAXIMUM Door weight 110kg. Suitable for Door Width 750~1100mm.

Nominal Glass					MA	XIMU	M Doo	or Hei	ights S	Span	(mm)	for Wi	ind Zo	ones				
Thickness (mm)	Inte	rnal O.	.5kPa	Lov	w 0.72	kPa	Medi	um 0.9	96 kPa	Hig	h 1.36	kPa	Very	High 1.	76 kPa	E	ktra H	igh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	1100	Yes	2200	1100	No	2000	1100	Yes	1800	1100	Yes	NA	NA	No			
12mm TEMPAFLOAT®	2800	1100	Yes	2600	1100	No	2400	1100	Yes	2200	1100	Yes	2000	1100	Yes			
15mm TEMPAFLOAT®	3600	814	Yes	3400	862	Yes	3200	916	Yes	2800	1047	Yes	2400	1100	Yes			
19mm TEMPAFLOAT®	3087	750	Yes	3087	750	Yes	3087	750	Yes	3087	750	Yes	3087	750	Yes			



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Dormakaba Floor Springs (Hydraulic Patch)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
BTS84 FLOOR SPRING	500582	15Nm 90 DEGREE HOLD OPEN	SS	316 STAINLESS STEEL	HYDRAULIC FLOOR MOUNTED	STANDARD PIVOT DOOR HINGE DOOR	Internal & External
HYDRAULIC PATCH KIT	500583	NON HOLD OPEN	SS		PATCH		
-	500580	25Nm 90 DEGREE HOLD OPEN	SS				
	500581	NON HOLD OPEN	SS				
		GLASS THICKNESS: 8-12mm	ON REQUEST: POWDERCOAT				
		Max Door Weight 100kg					
BTS75 FLOOR SPRING	500584	15-25Nm 90 DEGREE HOLD OPEN	SS	316 STAINLESS STEEL	HYDRAULIC FLOOR MOUNTED	ADJUSTABLE STRENGTH PIVOT DOOR	Internal & External
HYDRAULIC PATCH KIT	500585	NON HOLD OPEN	SS		PATCH FITTING	HINGE DOOR	
		GLASS THICKNESS: 8-12mm	ON REQUEST: POWDERCOAT				
		Max Door Weight 120kg					
BTS80 FLOOR SPRING HYDRAULIC PATCH KIT	500586	35Nm 90 DEGREE HOLD OPEN & NON HOLD OPEN	SS	316 STAINLESS STEEL	HYDRAULIC FLOOR MOUNTED PATCH FITTING	HEAVY DUTY PIVOT DOOR HINGE DOOR	Internal & External
	500587	53Nm 90 DEGREE HOLD OPEN & NON HOLD OPEN	SS				
		GLASS THICKNESS: 8-12mm	ON REQUEST: POWDERCOAT				
		Max Door Weight 300kg					

BTS84, BTS75, BTS80 supplied complete with Foundation Box, Stainless Steel Cover Plate, Screw Pack. **(STANDARD PATCH FITTINGS CAN ACCOMMODATE 10–12mm GLASS ONLY).**

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Dormakaba Floor Spring Individual Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
FLOOR SPRING	300544	STD SPINDLE	SS	316 STAINLESS	FLOOR	COMPONENT	Internal &	
SPINDLES	300545	5mm	SS	STEEL	SPRING SPINDLES	*Please specify if	External	
	300538	10mm	SS			you require Offset 3 degrees for		
623	300539	15mm	SS		SUITS COMPONENT	single action LH or RH		
	300540	20mm	SS		BTS84 BTS75			
20	300541	25mm	SS		BTS80	BTS80	3° LH off set spindle	
	300542	40mm	SS			LH on set spindle		
	300543	50mm	SS				3° RH off set spindle	
BTS84 COVER PLATE	300533	325x130mm	SS	316 STAINLESS STEEL	COVER PLATE	REPLACEMENT PARTS	Internal & External	
BTS75 COVER	300368	308x106mm	SS	316 STAINLESS	COVER PLATE	REPLACEMENT	Internal &	
PLATE				STEEL		PARTS		
BTS80 COVER	300369	368x105mm	SS	316 STAINLESS	COVER PLATE	REPLACEMENT	Internal &	
PLATE				STEEL		PARTS	External	



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HARDWARE



Dormakaba Overhead Transom Closer (Hydraulic Patch)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
RTS85 OVERHEAD TRANSOM	500588	25Nm ALUMINIUM / TIMBER FIX	SS	316 STAINLESS STEEL	HYDRAULIC FLOOR MOUNTED	STANDARD PIVOT DOOR HINGE DOOR	Internal & External
CLOSER HYDRAULIC PATCH KIT	500589	90 DEGREE HOLD OPEN NON HOLD OPEN	SS		PATCH FITTING		
K.		GLASS THICKNESS: 8-12mm	ON REQUEST: POWDERCOAT				



Overhead Transom Closer Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
RTS85 COVER PLATE	300397	365x117mm	SS	316 STAINLESS STEEL	COVER PLATE REPLACEMEN *Suits both Timber and Aluminium Installations		Internal & External
•							
RTS85 RAIL INSERT	501269	76x26x19mm	GOLD PASSIVATED PLATED	316 STAINLESS STEEL	TOP PIVOTING RAIL	DOOR RAILS	Internal & External
		The Top Pivoting Rail will require an extra conversion Insert (RTS85 RAIL INSERT sku 501269)			CONVERSION		
		Used with MR20 & MR40 Door Rails.					





HARDWARE



Austvision SpiderDoor System (Architectural Door Pivots)

The Austvision SpiderDoor System uses specially developed spider pivot door fittings for internal and external door entries, and to compliment Austvision structural glass systems.



Key Features

- The SpiderDoor typically uses four fittings:
- ▶ 451 Two arm spider bottom pivot.
- ▶ 452 Two arm spider top pivot series.
- 483 Spider top transom pivot.
- 456 Half moon plunger lock fitting.

Glass fittings are normally M8 CSK or M8 CSK Disc fittings to suit the application. The fittings are cast 316 marine grade stainless steel in satin and polished finish.

Product features

- Easy to measure and install.
- Fits to standard floor springs and pivots.
- Good corrosion resistance.
- ▶ Range of fitting configurations to suit the application.

The Austvision SpiderDoor is available in a range of systems

- ▶ FSS Folding Stacking Spider.
- ▶ BFS Bi-Folding Spider Top spider hanger and patch lock.
- SFR Spider Stacking System Top and bottom Door.

The system is glazed with Metro Performance Glass, as follows:

- ▶ 10mm & 12mm Toughened Safety Glass
- ▶ Toughened Heat Soak Glass
- ▶ Toughened Screen Print Glass
- Toughened Digital Print Glass

Scope of Use

Compliments spider structural glass wall fittings.

Material Finish

- Satin or Polished Stainless Steel.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz. 3

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Austvision Spiderdoor System (Architectural Door Pivots)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
483 SPIDER TOP TRANSOM PIVOT	500478	CSK BUSH OPTION	SS	316 STAINLESS STEEL	SPIDER PIVOT	PIVOT DOOR HINGE DOOR	Internal & External
	500479	35MM CSK DISC OPTION	SS			TOP OF TRANSOM	
		GLASS THICKNESS: 10-12mm	ON REQUEST: PSS			*Includes Stainless Steel Guide Pin	ίU
452 SPIDER TOP DOOR PIVOT	500480	CSK BUSH OPTION	SS	316 STAINLESS STEEL	SPIDER PIVOT	PIVOT DOOR HINGE DOOR	Internal & External
	500481	35MM CSK DISC OPTION	SS			TOP OF DOOR	
		GLASS THICKNESS: 10-12mm	ON REQUEST: PSS				ίU
451 SPIDER BOTTOM DOOR PIVOT	500482	CSK BUSH OPTION	SS	316 STAINLESS STEEL	SPIDER PIVOT *Fits to floor	PIVOT DOOR HINGE DOOR BOTTOM OF	Internal & External
	500483	35MM CSK DISC OPTION	SS		spring closer	DOOR	
		GLASS THICKNESS: 10-12mm	ON REQUEST: PSS				

FSS – Folding Stacking Spider - Top spider and bottom patch lock

BFS – Bi Folding Spider – Top spider hanger and patch lock

(STANDARD PATCH FITTINGS CAN ACCOMMODATE 10-12mm GLASS ONLY)

Austvision Spiderdoor Lock

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area		
456 BOTTOM	301069	LEFT HAND	SS	316 STAINLESS	LOCK	PIVOT DOOR	Internal &		
PATCH LOCK	301070	RIGHT HAND	SS	STEEL		HINGE DOOR SPIDERDOOR	External		
-	301071	LEFT HAND	SS			511	LOCK		
"	301072	RIGHT HAND	SS						
		GLASS THICKNESS: 10-12mm	KNESS: PSS		iU				
DOOR LOCK	300871	LOCK SHOOT	SS	ALUM	KEEPER	PIVOT DOOR	Internal &		
KEEPER AG61			ON REQUEST: POWDERCOAT			HINGE DOOR	External		

Austvision Spiderdoor System Individual Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SPIDER GUIDE PIN	301473	40x15mm	SS	316 STAINLESS STEEL	GUIDE PIN	REPLACEMENT PARTS	SPIDER DOOR COMPONENT
452 SPIDER TOP DOOR PIVOT	301126	42x55mm	SS	316 STAINLESS STEEL	SPIDER PIVOT *Individual Component	TOP OF DOOR	SPIDER DOOR COMPONENT
451 SPIDER BOTTOM DOOR PIVOT	301125	40x55mm	SS	316 STAINLESS STEEL	SPIDER PIVOT *Individual Component *Fits to Floor Spring Closer	BOTTOM OF DOOR	SPIDER DOOR COMPONENT

ADDITIONAL: HANDLE OR KNOB SELECTION REQUIRED

(Refer Handle selection table for additional options)

NOTE: Allowance must be made in the glass panel for cut out holes (Handle or Knob) as well as spider fitting







Austvision SlydStak & Bi-Folding Frameless Folding Door Systems

Austvision frameless folding door systems are designed for heavy duty commercial applications up to 3.0m maximum opening height.



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Key Features

- Range of hardware options.
- Easy to maintain.
- Smooth nylon radial suspension roller system.
- Rollers rated to 110kg each (typically 2 per door).
- ▶ Good corrosion resistance.
- Appealing design.
- A range of parking bay options to stack doors.
- Special track covers to support ceiling panels.
- ▶ Range of hardware options.
- Easy to maintain.

The Austvision frameless door system is available in three variants:

- Austvision Slydstack door system (individual door leaves are stacked parallel to one another in a left or right handed stacking bay)
- Austvision Bi-Folding door system (individual door leaves are paired up and folded like an accordion along the overhead track)

The key difference between the two systems is the way the door leaves are stored. The Slydstack door system stacks individual door leaves parallel to one another in a left or right handed stacking bay, while the Bi-Folding door system pairs and folds the individual door leaves along the overhead track.

Additionally, the following system is available. Which compliments spider structural glass wall fittings.

Austvision Folding Stacking Spider door system (individual door leaves are paired up and folded like an accordion along the overhead track)

Product features

- Easy to measure and install.
- Fits to standard floor springs and pivots.
- ▶ Good corrosion resistance.
- ▶ Range of fitting configuration to suit the applications.

The system is glazed with Metro Performance Glass, as follows:

- Suitable for 10,12 and 15mm Toughened Safety Glass.
- ▶ Toughened Heat Soak Glass.

- Toughened Screen Print Glass.
- Toughened Digital Print Glass.
- Laminated Structural SAFELITE® EVA or SAFELITE® STF (Sentry®) Glass- (Security Pins Required).

The Austvision SlydStak is available in a range of systems

- FSR Folding Stacking Rail Top and/or Bottom Rail – with locking and latching.
- BFR Bi Folding Rail Top and bottom Rail.
- SFR Spider Stacking System Top and bottom Door.

Material Finish

- The SlydStak overhead track is extruded aluminium in natural anodised aluminium finish.
- The cover plates for the overhead track are standard in natural anodised aluminium finish or can be powder coated to suit décor, can be anodisied upon request
- The door rails are extruded aluminium and supplied standard with 316 marine grade satin stainless steel covers or 25µm natural anodised aluminium. Covers can be powder coated if required, can be anodisied upon request.

Scope of Use

- SlydStak can be used for internal folding and stacking wall and screens or sheltered external applications like shopfronts, showrooms or restaurant and bar frontages protected by a canopy.
- Barrier Free customer access to merchandise. Solution provides for traditional window-shopping with complete security.

Support Inquiries

- For any other designs or suitable details please contact MFG directly.
- Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz.



Austvision Slydstak and Bi-Folding System



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
FSR – FOLDING STACKING RAIL 4 DOOR KIT	501215	4000mm GLASS THICKNESS: 10-15mm ON REQUEST: POWDERCOAT	ANOD NATURAL	ALUM 6063	FSR – FOLDING STACKING RAIL *Door leaves stacked parallel to one another in a left or right handed stacking bay.	FOLDING / STACKING DOOR RAIL COMPLETE KIT 4 DOOR KIT	Internal 8 External
FSR – FOLDING STACKING RAIL 5 DOOR KIT	501257	5000mm GLASS THICKNESS: 10-15mm ON REQUEST: POWDERCOAT	ANOD NATURAL	ALUM 6063	FSR – FOLDING STACKING RAIL *Door leaves stacked parallel to one another in a left or right handed stacking bay.	FOLDING / STACKING DOOR RAIL COMPLETE KIT	Internal 6 External
FSR – FOLDING STACKING RAIL 6 DOOR KIT	501258	6000mm GLASS THICKNESS: 10-15mm ON REQUEST: POWDERCOAT	ANOD NATURAL	ALUM 6063	FSR – FOLDING STACKING RAIL *Door leaves stacked parallel to one another in a left or right handed stacking bay.	FOLDING / STACKING DOOR RAIL COMPLETE KIT	Internal & External
FSR – FOLDING STACKING RAIL 8 DOOR KIT	501259	8000mm GLASS THICKNESS: 10-15mm ON REQUEST: POWDERCOAT	ANOD NATURAL	ALUM 6063	FSR – FOLDING STACKING RAIL *Door leaves stacked parallel to one another in a left or right handed stacking bay.	FOLDING / STACKING DOOR RAIL COMPLETE KIT	Internal & External
FSR – FOLDING STACKING RAIL 10 DOOR KIT	501260	10m GLASS THICKNESS: 10-15mm ON REQUEST: POWDERCOAT	ANOD NATURAL	ALUM 6063	FSR – FOLDING STACKING RAIL *Door leaves stacked parallel to one another in a left or right handed stacking bay.	FOLDING / STACKING DOOR RAIL COMPLETE KIT	Internal & External

(Standard Patch Fittings can accommodate 10-12mm GLASS ONLY)

FSR – Folding Stocking Rail – Top and bottom Rail

NOTE: 1000mm door panels, please specify left or right handed stacking bay.



Austvision Bi-Folding Door System

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
BFR – BI-FOLDING STACKING RAIL 3 DOOR KIT	501261	3000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	ALUM 6063	BFR – BI-Folding STACKING RAIL *Door leaves paired up and folded like an accordion on overhead track.	BI-FOLDING DOOR RAIL COMPLETE KIT	Internal 8 External
BFR – BI-FOLDING STACKING RAIL 4 DOOR KIT	501262	4000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	ALUM 6063	BFR – BI-Folding STACKING RAIL *Door leaves paired up and folded like an accordion on overhead track.	BI-FOLDING DOOR RAIL COMPLETE KIT	Internal 6 External
BFR – BI-FOLDING STACKING RAIL 5 DOOR KIT (INCLUDES PIVOT DOOR)	501263	5000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	ALUM 6063	BFR – BI-Folding STACKING RAIL *Door leaves paired up and folded like an accordion on overhead track.	BI-FOLDING DOOR RAIL COMPLETE KIT	Internal 8 External
BFR – BI-FOLDING STACKING RAIL 6 DOOR KIT	501264	6000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	ALUM 6063	BFR – BI-Folding STACKING RAIL *Door leaves paired up and folded like an accordion on overhead track.	BI-FOLDING DOOR RAIL COMPLETE KIT	Internal & External
BFR – BI-FOLDING STACKING RAIL 8 DOOR KIT	501625	8000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	ALUM 6063	BFR – BI-Folding STACKING RAIL *Door leaves paired up and folded like an accordion on overhead track.	BI-FOLDING DOOR RAIL COMPLETE KIT	Internal o External
BFR – BI-FOLDING STACKING RAIL 10 DOOR KIT	501266	10m GLASS THICKNESS: 10-15mm	ANOD NATURAL	ALUM 6063	BFR – BI-Folding STACKING RAIL *Door leaves paired up and folded like an accordion on overhead track.	BI-FOLDING DOOR RAIL COMPLETE KIT	Internal o External

(Individual door leaves are paired up and folded like an accordion along the overhead track)

BFR – Bi-Folding Rail – Top and bottom Rail

NOTE: 1000mm door panels, please specify left or right handed stacking.





HARDWARE WARBANTY

Austvision Spider Bi-Folding Door System



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SFR – BI FOLDING STACKING RAIL 3 DOOR KIT	501270	3000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	316 STAINLESS STEEL ALUM 6063	SFR – SPIDER STACKING SYSTEM *Door leaves paired up and folded like an accordion on track.	BI-FOLDING SPIDER DOOR RAIL COMPLETE KIT	Internal 8 External
SFR – BI FOLDING STACKING RAIL 4 DOOR KIT	501271	4000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	316 STAINLESS STEEL ALUM 6063	SFR – SPIDER STACKING SYSTEM *Door leaves paired up and folded like an accordion on track.	BI-FOLDING SPIDER DOOR RAIL COMPLETE KIT	Internal 8 External
SFR – BI FOLDING STACKING RAIL 5 DOOR KIT (INCLUDES PIVOT DOOR)	501272	5000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	316 STAINLESS STEEL ALUM 6063	SFR – SPIDER STACKING SYSTEM *Door leaves paired up and folded like an accordion on track.	BI-FOLDING SPIDER DOOR RAIL COMPLETE KIT	Internal 8 External
SFR – BI FOLDING STACKING RAIL 6 DOOR KIT	501273	6000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	316 STAINLESS STEEL ALUM 6063	SFR – SPIDER STACKING SYSTEM *Door leaves paired up and folded like an accordion on track.	BI-FOLDING SPIDER DOOR RAIL COMPLETE KIT	Internal 8 External
SFR – BI FOLDING STACKING RAIL 8 DOOR KIT	501274	8000mm GLASS THICKNESS: 10-15mm	ANOD NATURAL	316 STAINLESS STEEL ALUM 6063	SFR – BI-Folding STACKING RAIL *Door leaves paired up and folded like an accordion on track.	BI-FOLDING SPIDER DOOR RAIL COMPLETE KIT	Internal & External
SFR – BI FOLDING STACKING RAIL 10 DOOR KIT	501275	10m GLASS THICKNESS: 10-15mm	ANOD NATURAL	316 STAINLESS STEEL ALUM 6063	SFR – BI-Folding STACKING RAIL *Door leaves paired up and folded like an accordion on track.	BI-FOLDING SPIDER DOOR RAIL COMPLETE KIT	Internal & External

(Individual door leaves are paired up and folded like an accordion along the overhead track)

SFR – Spider Stacking System – Top and bottom Door.







GlassGlide GG150 – Sliding Door Top Hung

The GlassGlide is designed for internal 10 and 12 mm TEMPAFLOAT® Toughened Safety Glass doors up to a maximum weight of 150 kg. It can also be used in wet areas. The GlassGlide has been designed with a clip on pelmet cover and an optional clip in carrier for door side panels.





3

Key Features

- Ceiling or Wall Mount (Top Hung).
- Slim Profile track with option for sidelight carrier section.
- The top track with pelmet cover measure 62 x 53mm and are standard in anodised aluminium. Powder coated colour finishes are also available.
- The rollers are Nylon with stainless steel bearings and screws fitted to an anodised aluminium roller carriage body.
- The bottom floor guide is anodised aluminium with a polypropylene adjustable thickness insert.
- The door has no rail and is clamped inside the top housing, which is adjustable in height.
- The bottom of the door is frameless and located in a cast adjustable door guide.
- The side panel is fitted into aluminium channels top and bottom.

Material Finish

- Natural Anodisied.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Typical GlassGlide set outs are:

- GlassGlide Ceiling Mount single or double door
- GlassGlide Wall Mount single or double door

The system is glazed with Metro Performance Glass, as follows:

- ▶ 10mm or 12mm Toughened Safety Glass
- ▶ Toughened Heat Soak Glass
- ▶ Toughened Screen Print Glass
- ▶ Toughened Digital Print Glass
- Laminated Structural Glass SAFELITE® EVA or SAFELITE® STF (Sentry®) - (requires special clamps)
- Glass must have a minimum strength of 100MPa. All edges polished.



Hardware

Refer to your local Metro Frameless Glass Stockist for advice. Or see Section 6.

Scope of Use

- The GlassGlide Sliding door is designed for glass doors up to a maximum weight of 150kg.
- Suitable for internal fit-outs, including bathrooms and showers. An easy solution to partition off a room with the benefits of glass.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

GlassGlide

SUITABLE FOR INTERNAL ONLY. MAXIMUM Door weight 150kg.

Nominal Glass Thickness (mm)					MA	хіми	M Doo	or Hei	ights S	Span	(mm)	for Wi	ind Zo	ones				
	Inte	rnal O.	rnal 0.5kPa Low 0.72 kPa Medium 0.96 kPa High 1.36 kPa Very High 1.76 kPa		76 k Pa	6kPa Extra		igh										
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	2500	Yes			No			No			No			No			No
12mm TEMPAFLOAT®	2800	1785	Yes			No			No			No			No			No



GLASSGLIDE SLIDING DOOR SYSTEM

Top Hung (Ceiling or Wall Mount)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
GLASSGLIDE	500016	1000mm Wide	ANOD NATURAL	ALUM 6063	TOP HUNG	SLIDING DOOR	Internal
SLIDING DOOR SET	500017	1500mm Wide	ANOD NATURAL		*Each Set includes		
53 28	500018	2000mm Wide	ANOD NATURAL		(Track, Pelmet, Hangers, Stops, End		
and and a state		*Maximum Door	ON REQUEST:		Caps & Floor Guides, top track screws		
		Weight 150kg	POWDERCOAT		(4 per metre)		
1		GLASS THICKNESS:					
- 32 - 10		10 or 12mm					
H Period							
8							
23							
(TAm)							
The second secon							
GLASSGLIDE	500013	2000mm Wide	ANOD NATURAL	ALUM 6063	TOP HUNG	SLIDING DOOR	Internal
SLIDING DOOR WITH SIDELIGHT	500014	3000mm Wide	ANOD NATURAL		*Each Set includes		
SET	500015	5000mm Wide	ANOD NATURAL		(Track, Sidelight Carrier Section, Infill Channel for Hangers, Stops, End		
		*Maximum Door	ON REQUEST:				
		Weight 150kg	POWDERCOAT		Caps & Floor Guides, top track screws		
		GLASS THICKNESS:			(4 per metre)		
x2 10 5		10 or 12mm					
ри = Уг - Н							
Door te							
9							
- 12							
- 10 - ³²							
oget = Tor							
4 600							
	200247	2500					
CHANNEL CS25	300317 300320	2500mm 5000mm	ANOD BRIGHT ANOD NATURAL	<u> </u>			
	300319	5000mm	MILL FINISH				
	300318	5000mm	BLACK				
		GLASS THICKNESS:	ON REQUEST:				
P		10-15mm	POWDERCOAT				
		OVERALL SIZE:					
		25 x 20mm					

3



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GLASSGLIDE SLIDING DOOR SYSTEM

Individual Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
GLASS GLIDE	300625	53 x 62mm	ANOD NATURAL	ALUM 6063	END CAP	SLIDING DOOR	Internal
END CAP	300624	71 x 62mm*	ANOD NATURAL			COMPONENT	
		*Cap to cover sidelight carrier					ئـا
GLASS GLIDE WOOLPILE	302082	4.8mm backing 16mm Pile height	GREY	PS16 SKIRTING SEAL	WEATHER SEAL		Internal
and the second s		*Per Metre					
GLASSGLIDE	300627	3000mm	ANOD NATURAL	ALUM 6063	TOP COVER	SLIDING DOOR	Internal
TOP COVER	300628	5000mm	ANOD NATURAL			COMPONENT	
							Ľ
GLASSGLIDE SIDELIGHT	300620	3000mm	ANOD NATURAL	ALUM 6063	COVER AND	SLIDING DOOR	Internal
CARRIER TOP COVER	300621	5000mm	ANOD NATURAL		SIDELIGHT	COMPONENT	
GLASSGLIDE	300629	2000mm	ANOD NATURAL	ALUM 6063	TOP TRACK	SLIDING DOOR	Internal
TOP TRACK	300630	3000mm	ANOD NATURAL			COMPONENT	
	300631	5000mm	ANOD NATURAL				ئـا
	300619		ANOD NATURAL	ALUM 6063	CARRIAGE	SLIDING DOOR	Internal
GLASSGLIDE CARRIAGE SET			ON REQUEST: POWDERCOAT	ALUM 6063	SET	COMPONENT	
	300622	0.8mm non M	FLEXSEAL	DUBBES	DAGKERS		1
GLASSGLIDE PACKERS	300622	0.8mm per M 1.5mm per M	FLEXSEAL	RUBBER	PACKERS	SLIDING DOOR COMPONENT	Internal
a min mar a							

3

HARDWARE



3

FRAMELESS COMMERCIAL DOORS

Installation / Fitting Instructions

GlassGlide (GG150)

Product	Installation/Fitting Instructions
Overhead track Preparation	 Check supporting structure to ensure the mounting face is level Packers can be used to level the overall track length. The packers are NOT included in this kit. Packer width should not exceed the width of the track (50mm).
Installation of the Overhead Track to the Supporting Structure	 Fix the track using 10g x 50mm SS countersunk screws at 250 to 500 centres to suit the structure you are fixing to. Ensure the screw heads are flush with the track so the roller carriage does not catch them. As a guide use: 3 fixings per metre for doors up to 100kg, and 4 fixings per metre for doors over 100kg.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



Installation / Fitting Instructions

Product	Installation/Fitting Instructions
Glass Door Assembly	• Locate the glass roller clamps 100mm from the glass edge using a thin fibre gasket or tape to separate the glass edge from the metal clamp.
1000	 Note. For 8 or 10mm glass add extra gaskets to the outer section of the clamp by removing the double sides tape backing and applying them to the existing gaskets.
~	 Tighten the clamp screws by hand then torque the M6 fastenings to 14 Nm. Slide in bump-stops before lifting and locating door onto rail and leave them loose in track.
	• Lift and locate the glass door onto the track and ensure it have a smooth flowing operation.
	– Note. To ensure the glass door runs smoothly adjust the height of the roller carriages by winding the Allen key fixing in or out to suit. When the door sits 'plumb' in the track adjust the anti-jump screw so that it clears the track by only 1 – 2mm.
	• Set the bump stops in their correct locations by sliding the door from its desired opened and closed positions. Hold the door at each position against the stop and fix them in place by tightening the Allen screws.
	• Check the door for 'plumb' from track to floor, then locate and fix the floor guide in place.
Seals and Covers (if applicable)	Slide in seal to supplied channel and attach to glass edge if required, or apply seal directly to the glass edge (depending on which seal is used)
2 Martin	 Locate pelmet cover and fix in place using a dab of silicone at approximately 500mm centres.
	• Fix track end caps with double sided tape or a dab of silicone to the corners and leave it to set.
For Systems with Side Panels	 Follow all previous steps unto the pelmet cover choice. Use Side Panel cover for the top track and secure with 8g screws at 400mm centres.
	 Use CS25 glazing channel for wall and/ or floor channel, fixing the floor channel with 8g screws at 400mm centres.
and the second s	• Glaze the Side Panel and wedge or silicone it in the channel as suits.
1 miles	• Cut to length a piece of infill channel section and secure into the top pelmet cover with silicone and tape as suits.
Final Adjustment	 Lubricate the inside track θ all moving parts of the carriages with silicone spray.
	 Check clearances on top and bottom of the door, adjust the height of the door by raising or lowering the carriage shaft.
	3. Do a final check and ensure the door is level.
Trouble Shooting	 1. Roller slide difficulties: If the sliding door operation becomes difficult, lubricate the roller carriages and the aluminium overhead track with lubricant or silicone spray to reduce traction between rollers and the aluminium track.
	2. Door height uneven: The roller carriages are not in the centre or the door rails are not squared and plumb.
Cleaning	Once everything is correctly in place and the job is complete, the glass and plate need to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide page 684.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



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GlassSlide MF250 – Heavy Duty Sliding Door Top Hung

The GlassSlide MF250 is designed for 10 and 12mm TEMPAFLOAT® Toughened Safety Glass doors up to a maximum weight of 250kg. It can be modified for thicker glass and SAFELITE® EVA or SAFELITE® STF (Sentry®) Toughened Laminated Structural Glass (TLSG) and can be used for internal applications and selected sheltered external applications.

The top track is 50 x 50mm anodisied aluminium and the hangers have a forged body and Nylon wheels with chrome steel roller bearings. Door rails are aluminium with natural anodisied or stainless steel or polished stainless steel cover plates and the floor guide is a cast body with adjustable nylon walls. The bottom floor mount channel option uses anodisied aluminium to suit nylon rollers or with a polypropylene insert for metal rollers.

Typically, the MF250 is used for single sliding doors with or without a glass side panel. The door has a top rail which houses the roller carriage adjustable in height from 12 to 20mm.

3

Key Features

- MF250 RG Top Rail Bottom Guide: The bottom of the door can be frameless and fitted with a door guide.
- MF250 RR Top and Bottom Rails: The bottom of the door is fitted with a rail and floor guides used.
- The door has a top rail which houses the roller carriage which is adjustable in height from 12 to 20mm.
- Multiple door sets can operate with pick up guides fitted to the top door rails, but this system requires continuous bottom floor mounted channels.

Material Finish

- Natural Anodisied.
- Powdercoated on request. Note: Powder coating is available. in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Typical Metro MF250 set outs are:

▶ MF250 GW – Ceiling Mount – single or double door.

The system is glazed with Metro Performance Glass, as follows:

- Designed for 10 and 12mm Toughened Safety Glass. The system can be modified to accommodate thicker glass and TEMPAFLOAT® Laminated Structural Glass (TLSG) Laminate = AGA Rail up to 15mm with security pin, holes in glass required.
- ▶ Toughened Heat Soak Glass
- ▶ Toughened Screen Print Glass
- Toughened Digital Print Glass
- Laminated Structural Glass SAFELITE® EVA or SAFELITE® STF (Sentry®) - (requires special top rails with security pins fitted).
- Glass must have a minimum strength of 100MPa. All edges polished.

Hardware

Refer to your local Metro Frameless Glass Stockist for advice. Or see Section 6.



Scope of Use

- The GlassSlide Sliding door is designed for glass doors up to a maximum weight of 250kg.
- To be used for internal applications and selected sheltered external applications typically in a Low Wind Zone (For specification advice refer Metro Technical Department).

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

GlassSlide MF250

SUITABLE FOR INTERNAL & SHELTERED EXTERNAL APPLICATIONS ONLY. Maximum Door weight 250kg.

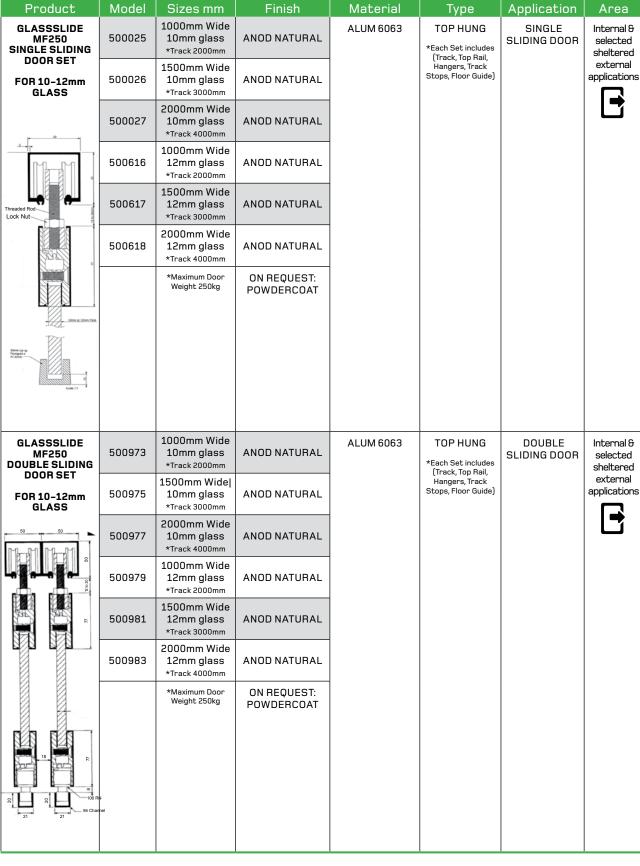
Nominal Glass	MAXIMUM Door Heights Span (mm) for Wind Zones																	
Thickness (mm)	Inte	rnal O.	.5kPa	Lo	w 0.72	kPa	Medi	um 0.9	96 kPa	Hig	h 1.36	kPa	Very	High 1.	76 kPa	E	xtra H	igh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	4166	Yes	2200	4545	Yes			No			No			No			No
12mm TEMPAFLOAT®	2800	2976	Yes	2600	3205	Yes			No			No			No			No
13.2mm SAFELITE® EVA	-	-	Yes	_	-	Yes			No			No			No			No
13.5mm SAFELITE® STF (Sentry®)	-	-	Yes	-	-	Yes			No			No			No			No



GLASSSLIDE MF250 SLIDING DOOR SYSTEM

HARDWARE WARRANTY

Top Hung (Ceiling Mount)



NOTE: System can be used in single, bi-parting and multiple lines of sliding doors. Bottom rails and in ground channel guide systems available on request.



GLASSSLIDE MF250 SLIDING DOOR SYSTEM

Individual Components

Product Model Sizes mm Finish Material Type Application GLASSSLIDE MF250 BOTTOM CHANNEL 300968 3000mm(No PVC) ANOD NATURAL ALUM 6063 CHANNEL SLIDING COMPON 300970 6000mm(No PVC) MILL FINISH OR POWDERCOAT REQUEST MILL FINISH OR POWDERCOAT REQUEST ALUM 6063 CHANNEL SLIDING COMPON	DOOR Internal &
CHANNEL 300969 4000mm (No PVC) 300970 6000mm (No PVC) MILL FINISH OR 300971 3000mm (PVC) MILL FINISH OR 300972 4000mm (PVC) REQUEST	sheltered external
300970 6000mm (No PVC) MILL FINISH OR 300971 3000mm (PVC) REQUEST 300972 4000mm (PVC)	external
3009/1 3000mm(PVC) 300972 4000mm(PVC) REQUEST	applications
300972 4000mm(PVC)	
300973 6000mm(PVC)	
GLASSSLIDE 300974 103X25mm BLACK NYLON BOTTOM RAIL SLIDING MF250 GUIDE COMPON	
BOTTOM RAIL GUIDE	sheltered external
	applications
GLASSSLIDE 301633 2000mm ALUM 6063 TOP TRACK SLIDING	
MF250 300977 3000mm ANOD NATURAL COMPON	NENT selected sheltered
300978 4000mm OR POWDERCOAT	external
300979 5000mm REQUEST	applications
300980 6000mm	
GLASS GLIDE 6.9mm FINSEAL WEATHER SLIDING I WOOLPILE 302164 backing x GREY SEAL COMPON	
WOOLPILE 302164 backing x GREY SEAL COMPON FINSEAL 12.75 Height SEAL COMPON	NENT selected sheltered
*Per Metre	external applications
SUITS GLASS	
SLIDE (MF250)	
GLASSSLIDE 300981 45x35mm ANOD NATURAL ALUM/ TRACK STOP SLIDING	DOOR Internal &
MF250 STAINLESS COMPON TRACK STOP STEEL	NENT selected sheltered
COMBINED	external
	applications
GLASSSLIDE 300976 80x20mm ANOD NATURAL ALLIM 6063 HANGER SLIDING	
MF250 MOUNTING COMPON	IENT selected
RAIL HANGER BLOCK	sheltered external
BLOCK	applications
GLASSSLIDE 300975 80x95mm STEEL/NYLON ROLLING GEAR HANGER SLIDING I MF250 COMPON	
HANGER	sheltered
(SINGLES)	external applications
OLO.	

NOTE: Allowance must be made in the glass panel for cut out holes (Handle).





Installation / Fitting Instructions

GlassSlide (MF250)

Product	Installation/Fitting Instructions
Overhead track Preparation	• Check supporting structure to ensure the mounting face is level.
	• Packers can be used to level the overall track length. The packers are NOT included in this kit. Packer width should not exceed the width of the track (50mm).
Installation of the Overhead Track to the Supporting Structure	• Fix the track using 10g x 50mm SS countersunk screws at 200 to 400 centres to suit the structure you are fixing to. Ensure the screw heads are flush with the track so the roller carriage does not catch them.
2.00 State	As a guide use: • For door widths greater than half the opening width, 10g screws set at 200mm centres maximum.
	 For door widths less than half the opening width, 10g screws set at 400mm centres maximum.
	• Slide track mounted bump stops and roller carriages onto the top track without the door rails attached. Loosely fix the bump stops at their nominated distances from each end of the track.
Top Rail Assembly	Check that the roller blocks have been fixed to the half rail piece at their correct nominated distances from the rail edge, typically 100mm to the centre of the roller threaded rod.
	• Fix the half rail to the roller carriages in the track by hand tightening the threaded shafts into the blocks, refer Step 'A', figure 3.
	Note. For security purposes ensure that the M8 CSK screw holes are facing to the inside of the building/ room, etc. before fixing the rail to the rollers.
	• Level the rail to be parallel to the track, with a minimum/ maximum gap of 12mm to 20mm.
	• Secure the lock nut on the threaded shaft against the roller carriage block.
	 Loosely fix the second piece of the top rail with the M8 countersunk screws as needed, refer Step 'B', Figure 3 (without glass).
Glass Door Assembly	The M8 screws should still be loose.
	• Using 10mm packers, block the bottom edge of the door to obtain correct clearance. There should be 20mm minimum glass clamping surface in the top rail.
-	• Tighten the M8 screws up to 15Nm in the top rail and fix the covers in place, refer to Step 'C', figure 3.
	• To plumb the door and adjust the clearances at top and bottom, wind the roller carriage threaded shafts in and out as needed.
	• Re-secure the locking nuts when the door is plumb and remove the packers from under the bottom edge.
	Note. Allow for at least a 6mm gap, up to a maximum 10mm gap between the bottom edge of the door to the F.F.L.



Installation / Fitting Instructions

Product	Installation/Fitting Instructions
Installation of Floor Guide	• Slide open the door to its fully opened and closed positions.
Note. Complete this option if applicable	• Once the full open and closed positions are located slide the guide under the glass edge/ s and mark the locations of the screws. Ensure the door is plumb.
before Step 3, then continue as per above instructions.	• Slide the door back from those locations and fix the floor guide in place, ensuring that the screws are flush with the base of the guide.
	Note. Ensure the guide will always retain the door throughout its full travel. This position is usually in line with the door jamb.
Bottom Rail Installation Option	Note. For security purposes ensure that the M8 CSK screw holes are facing to the inside of the building/ room, etc. before fixing the rail to the glass door.
	• Clamp the rail assembly to the bottom glass edge and partially tighten the screws.
. /	• Adjust the position of the bottom rail to ensure it clamps 20mm minimum of the glass surface, refer Step 'B' and 'C', figure 4.
	• Tighten the M8 screws up to 15Nm and re-secure the rail covers.
	• Slide open the door to its fully opened and closed positions.
\checkmark	• Once the full open and closed positions are located slide the nylon guide under the glass edge and mark the locations of the screws.
Bottom Rail with Floor Guide only.	• Slide the door back from those locations and fix the floor guide in place, ensuring that the screws are flush with the base of the guide.
	Note. Ensure the guide will always retain the door throughout its full travel. This position is usually in line with the door jamb.
	• Plumb the centre of the guide pin channel from the centre line of the roller threaded shafts.
	• Locate guide channel in place and fix as is required, Step 'A', Figure 5.
2/	• Repeat rail assembly to bottom glass edge as per instructions for Bottom Rail With Floor Guide Only, referring to Step 'B' and Step 'C', Figure 5.
Bottom Rail with Guide Channel only	• Follow the applicable lock installation diagrams from the MFG Door Systems locking options drawings, ensuring lock fitting is clamped sufficiently to glass.
Final Adjustment	1. Lubricate the inside track θ all moving parts of the carriages with silicone spray.
	2. Check clearances on top and bottom of the door, adjust the height of the door by raising or lowering the carriage shaft.
	3. Do a final check and ensure the door is level.
and a second sec	4. Check the full open and closed positions and adjust the bump stops if necessary.
Trouble Shooting	 Roller slide difficulties: If the sliding door operation becomes difficult, lubricate the roller carriages and the aluminium overhead track with lubricant or silicone spray to reduce traction between rollers and the aluminium track.
	2. Door height uneven: The roller carriages are not in the centre or the door rails are not squared and plumb.
Cleaning	Once everything is correctly in place and the job is complete, the glass and plate need to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide page 684.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.

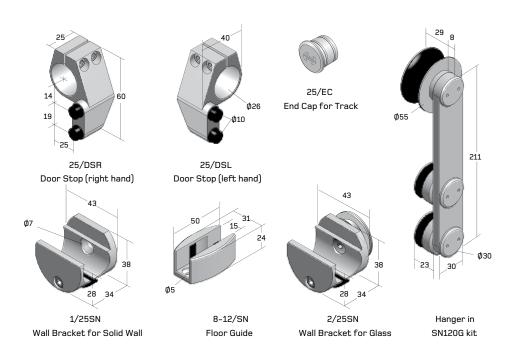




Sienna SN120 – Tubular Sliding Door System Top Hung

The Sienna SN120 is an elegant frameless glass door system for internal applications that provide a minimalist look. The Sienna SN120 is designed for 8, 10 and 12mm TEMPAFLOAT® Toughened Safety Glass doors up to a maximum weight of 120kg. The maximum glass doors height is 2400mm and minimum width is 700mm.

3



Key Features

- The top track is a 25mm diameter stainless steel tube which is fixed to the wall or glass side panels by a range of special stainless steel fixing.
- The hangers are stainless steel with nylon roller wheels and needle roller bearings and the floor guides are stainless steel with special adjustable nylon walls.
- The track stops are satin stainless steel with rubber bumper stops, while all stainless steel components are grade 304.
- Maximum Door width 2000mm. Minimum width is 700mm.
- Maximum Door height 2500mm.

Material Finish

- Satin Stainless Steel.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

Typical Sienna SN120 set outs are:

- SN GW Glass to Wall single or double door.
- SN GG Glass to Glass single or double door with side panels and over panels.

The system is glazed with Metro Performance Glass, as follows:

- Suits 8, 10 and 12mm TEMPAFLOAT® Toughened Safety Glass.
- ▶ Toughened Heat Soak Glass.
- Toughened Screen Print Glass.
- ▶ Toughened Digital Print Glass.
- Glass must have a minimum strength of 100MPa. All edges polished.

Hardware

 Refer to your local Metro Frameless Glass Stockist for advice. Or see Section 6.

Scope of Use

- The Sienna Sliding door is designed for glass doors up to a maximum weight of 120kg.
- The Sienna SN120 is an elegant frameless glass door system for internal applications that provide a minimalist look
- Two sets can be joined together for bi-parting door applications.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Sienna SN120

SUITABLE FOR INTERNAL ONLY. MAXIMUM Door weight 120kg.

Nominal Glass	MAXIMUM Door Heights Span (mm) for Wind Zones																	
Thickness (mm)	Inte	rnal O	.5kPa	Lo	w 0.72	kPa	Medi	um 0.9	96 kPa	Hig	h 1.36	kPa	Very	High 1.	76 k Pa	E	xtra H	ligh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
8mm TEMPAFLOAT®	2500	2000	Yes			No			No			No			No			No
10mm TEMPAFLOAT®	2400	2000	Yes			No			No			No			No			No
12mm TEMPAFLOAT®	2000	2000	Yes			No			No			No			No			No



SIENNA SN120 SLIDING DOOR SYSTEM

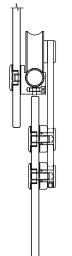
Top Hung (Ceiling Mount)

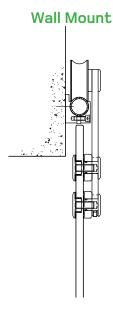


Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SIENNA SN120 SLIDING DOOR KIT	501140	1250mm Wide Door *Track 2500mm, 7 Glass Clamps	SS	STAINLESS STEEL	TOP HUNG *Each Set includes (Track, Hangers, Mounting Brackets,	SLIDING DOOR *Glass Mount sets contain mount brackets to fix track	Internal
GLASS MOUNT SET	501139	2000mm Wide Door *Track 4000mm, 7 Glass Clamps	SS		Stops and Floor Guide)	to glass over light and side panels	
		*Maximum Door Weight 120kg GLASS THICKNESS: 10mm	ON REQUEST: POWDERCOAT				
SIENNA SN120 SLIDING DOOR KIT	501138	1250mm Wide Door *Track 2500mm, 5 Glass Clamps	SS	STAINLESS STEEL	TOP HUNG *Each Set includes (Track, Hangers, Mounting Brackets,	SLIDING DOOR	Internal
WALL MOUNT SET	501137	1500mm Wide Door *Track 4000mm, 6 Glass Clamps	SS		Stops and Floor Guide)		
		*Maximum Door Weight 120kg GLASS THICKNESS: 10mm	ON REQUEST: POWDERCOAT				

NOTE: If specifying 8mm or 12m glass thickness please indicate this at time of order placement. Two door sets can be joined for bi-parting door applications.

Glass Mount







SIENNA SN120 SLIDING DOOR SYSTEM

Individual Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SIENNA SN120 TRACK JOINER	301367	103 x 25mm	SS	304 STAINLESS STEEL	INLINE JOINER	SLIDING DOOR COMPONENT	Internal

ADDITIONAL: HANDLE SELECTION REQUIRED

(Refer Handle selection table for additional options)

NOTE: Allowance must be made in the glass panel for cut out holes (Handle), minimum glazing clearances shall apply.

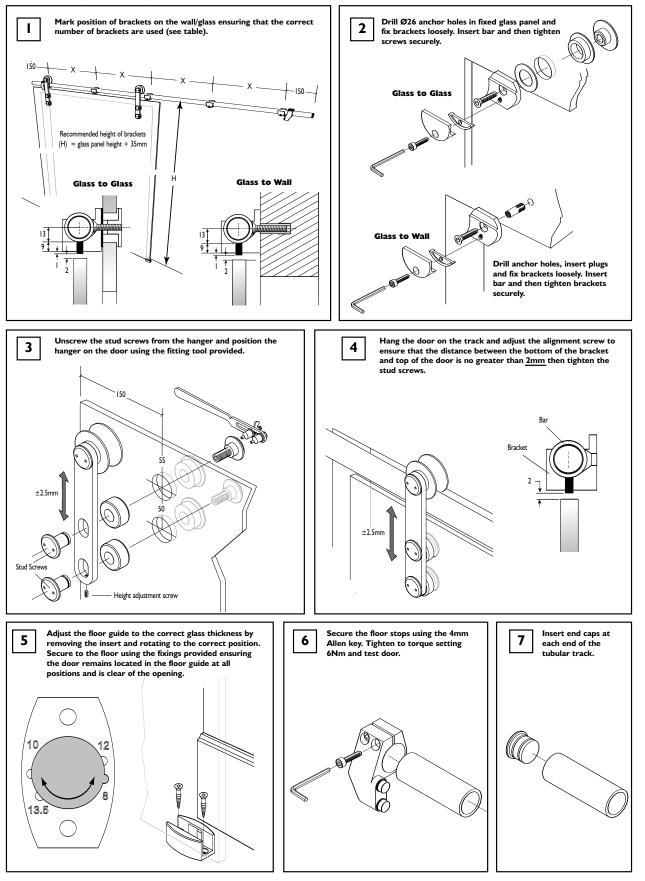
3

HARDWARE WARBANTY



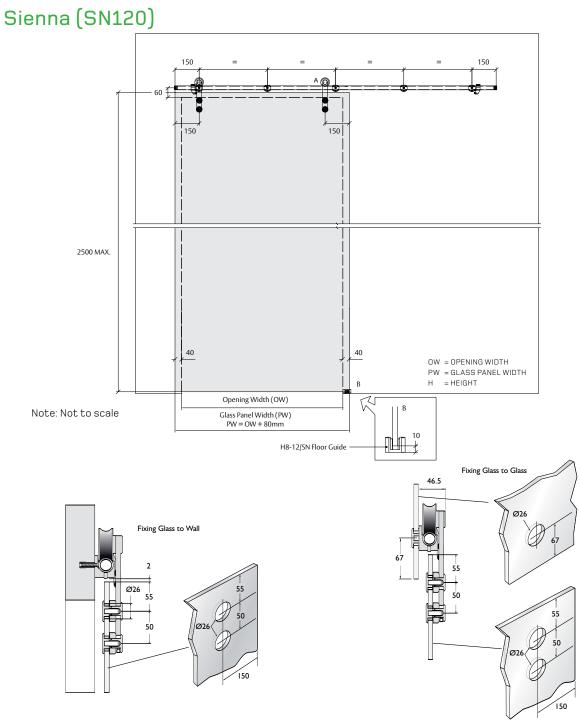
Installation / Fitting Instructions

Sienna (SN120)





Installation / Fitting Instructions



				М	AXIM	UM BF	RACKE	TSPA	CING	(X) CA	LCUL	ATION	TABL	E Pa	nel W	idth					
	up	o to 85	50	8	51-95	0	9	51-105	50	10	51-11	50	11	51-12	50	12	51-13	50	13	51-14	00
Height	Glass	s thick	ness	Glass	s thick	ness	Glass	s thick	ness	Glass	s thick	ness	Glass	s thick	ness	Glass	s thick	iness	Glass	s thick	iness
	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
1900	400	400	400	450	450	450	500	500	500	550	550	530	600	550	520	590	550	510	580	540	510
2000	400	400	400	450	450	450	500	500	500	550	540	510	580	540	510	570	530	500	570	530	500
2100	400	400	400	450	450	450	500	500	500	550	530	500	570	530	500	560	520	490	560	520	490
2200	400	400	400	450	450	450	500	500	490	550	520	490	550	510	480	550	510	480	540	500	470
2300	400	400	400	450	450	450	500	500	480	550	510	480	540	500	470	540	500	470	530	490	460
2400	400	400	400	450	450	450	500	500	470	550	500	470	530	490	460	530	490	460	520	480	450
2500	400	400	400	450	450	450	500	490	460	550	490	460	520	480	450	520	480	450	510	470	440

For reference estimated glass weights are: $8mm = 20kg/m^2 - 10mm = 25kg/m^2 - 12mm = 30kg/m^2$



Linear 100 & 153 – Sliding Door System Bottom Rolling

3

The Linear sliding door system is a bottom roller sliding frameless glass door system. This frameless sliding door hardware features Linear wheels fitted directly to the 10 and 12mm TEMPAFLOAT® Toughened Safety Glass that are run on special tracks to allow a very modern frameless glass effect. The floor is load-bearing and the head structure does not need to carry the weight of large doors.

3

Key Features

There are two Linear Systems:

- Linear 100 100mm diameter roller for doors up to 170 kg.
- Linear 153 153mm diameter roller for doors up to 250 kg.
- The Linear rollers are 304 grade stainless steel with black Acetal tyres, so the operation is smooth and silent.
- The doors can also be fitted with custom pick up guides if required for more than one door.
- Door side panels can be fitted and special sliding doors seals if required.
- The bottom track and head guide are natural anodisied aluminium and the head guide has brush felt fitted inside, while the finger pull or door handles are typically stainless steel but can be designed to suit the decor.

Material Finish

- Natural Anodisied.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

The system is glazed with Metro Performance Glass, as follows:

- ▶ 10mm & 12mm TEMPAFLOAT® Toughened Safety Glass.
- ▶ Toughened Heat Soak Glass.
- ▶ Toughened Screen Print Glass.
- ▶ Toughened Digital Print Glass.
- Glass must have a minimum strength of 100MPa. All edges polished.



Hardware

Refer to your local Metro Frameless Glass Stockist for advice. Or see Section 6.

Scope of Use

- The Linear System is designed to accommodate glass doors up to a maximum weight of 250kg.
- Most applications are internal for residential or commercial buildings, but external non-waterproof and wet area applications such as balcony screens or doors are possible typically in a Low Wind Zone (For specification advice refer Metro Technical Department).

Support Inquiries

 Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Linear 100

SUITABLE FOR INTERNAL OR NON WATERPROOF WET AREA APPLICATIONS ONLY. MAXIMUM Door weight 170kg.

Nominal Glass		MAXIMUM Door Heights Span (mm) for Wind Zones																
Thickness (mm)	Inte	rnal O	.5kPa	Lo	w 0.72	kPa	Medi	um 0.9	96 kPa	Hig	h 1.36	kPa	Very	High 1.	76 kPa	E:	xtra H	igh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	2833	Yes	2200	3090	Yes			No			No			No			No
12mm TEMPAFLOAT®	2800	2023	Yes	2600	2179	Yes			No			No			No			No

Linear 153

SUITABLE FOR INTERNAL OR NON WATERPROOF WET AREA APPLICATIONS ONLY. MAXIMUM Door weight 250kg.

Nominal Glass		MAXIMUM Door Heights Span (mm) for Wind Zones																
Thickness (mm)	Inte	rnal O.	.5kPa	Lo	w 0.72	kPa	Medi	um 0.9	96 kPa	Hig	h 1.36	kPa	Very	High 1.	76 kPa	E	xtra H	igh
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	4166	Yes	2200	4545	Yes			No			No			No			No
12mm TEMPAFLOAT®	2800	2976	Yes	2600	3205	Yes			No			No			No			No



LINEAR 100 SLIDING DOOR SYSTEM



Bottom Rolling

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
LINEAR 100 SLIDING DOOR KIT	500019	1000mm Wide *Track / Channel 2000mm	ANOD NATURAL	ALUM 6063	BOTTOM ROLLING	SLIDING DOOR	Internal
25 Top Channel	500697	1000mm Wide *Track / Channel 2000mm	MILL FINISH		*Each Set includes (2x 100mm SS Wheels, 2x top channels stops, 1x top channel, 1x		
Stop Woolpile	500020	1500mm Wide *Track / Channel 2000mm	ANOD NATURAL		bottom channel)		
12mm glass	500698	1500mm Wide *Track / Channel 2000mm	MILL FINISH				
Wheel	500021	2000mm Wide *Track / Channel 4000mm	ANOD NATURAL				
100	500699	2000mm Wide *Track / Channel 4000mm	MILL FINISH				
15 10		*Maximum Door Weight 170kg GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				

(Maximum Door Weight 170kg).

System can be used in single, bi-parting and multiple lines of sliding doors.

NOTE: Need to specify glass thickness on order, minimum glazing clearances shall apply.



LINEAR 153 SLIDING DOOR SYSTEM

Bottom Rolling

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
LINEAR 153 SLIDING DOOR KIT	500022	1000mm Wide *Track / Channel 2000mm	ANOD NATURAL	ALUM 6063	BOTTOM ROLLING	SLIDING DOOR	Internal
25 Top Channel	500700	1000mm Wide *Track / Channel 2000mm	MILL FINISH		*Each Set includes (2x 153mm SS Wheels, 2x top channels stops, 1x top channel, 1x		Ľ
Stop Woolpile 10mm or	500023	1500mm Wide *Track / Channel 2000mm	ANOD NATURAL		bottom channel)		
12mm glass	500701	1500mm Wide *Track / Channel 2000mm	MILL FINISH				
Wheel	500024	2000mm Wide *Track / Channel 4000mm	ANOD NATURAL				
153	500702	2000mm Wide *Track / Channel 4000mm	MILL FINISH				
		*Maximum Door Weight 250kg GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				

(Maximum Door Weight 250kg).

System can be used in single, bi-parting and multiple lines of sliding doors.

NOTE: Need to specify glass thickness on order, minimum glazing clearances shall apply.

3

HARDWARE WARBANTY



LINEAR 100 & 153 SLIDING DOOR SYSTEM



Individual Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
LINEAR BOTTOM TRACK	300926	3200mm	ANOD NATURAL	ALUM 6063	BOTTOM TRACK	SLIDING DOOR COMPONENT	Internal
-							
CHANNEL CS50	300332	50 x 25mm	ANOD NATURAL	304 STAINLESS	CHANNEL	CHANNEL	Internal
	300331	50 x 25mm	MILL FINISH	STEEL		SECTION	
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				Ľ
WOOLPILE FINSEAL	302005	4.8mm backing x 6.5 pile height	GREY	PBF48.650 FINSEAL	WOOLPILE	DOOR SEAL	Internal

ADDITIONAL: HANDLE SELECTION REQUIRED

(Refer Handle selection table for additional options)

NOTE: Side Mounted channels are available upon request please refer to the specific section on available channels. Allowance must be made in the glass panel for cut out holes (Handle)





Installation / Fitting Instructions

Linear (100 & 153)

Product	Installation/Fitting Instructions
Overhead track Preparation	 Check supporting structure to ensure the floor for the door track is level. Check lintel to ensure fixing for the top channel is level.
Installation of the Overhead Track to the Supporting Structure	 Fix the bottom channel track using 10g x 40mm SS countersunk screws at 200 to 400 centres to suit the structure you are fixing to. Ensure the screw heads are flush with the track so the glass or roller wheels don't catch them. Fix the top channel track using 10g x 40mm SS countersunk screws at 200 to 400 centres to suit the structure you are fixing to. Ensure the screw heads are flush with the channel so that the glass doesn't catch them. Slide track mounted bump stops and fix the bump stops at their nominated distances from each end of the track.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.



Installation / Fitting Instructions

Product	Installation/Fitting Instructions
Wheels	• Attach either the 100mm or 153mm running wheel to the glass panel, at nominated distances (Depending on system specified)
Final Adjustment	 Lubricate the inside track & all moving parts of the carriages with silicone spray. Do a final check and ensure the door is level. Check the full open and closed positions and adjust the bump stops if necessary.
Trouble Shooting	 Roller slide difficulties: If the sliding door operation becomes difficult, lubricate the roller carriages and the aluminium overhead track with lubricant or silicone spray to reduce traction between rollers and the aluminium track. Door height uneven: The roller carriages are not in the centre or the door rails are not squared and plumb.
Cleaning	Once everything is correctly in place and the job is complete, the glass and plate need to be cleaned. Use a non-abrasive glass cleaner on the glass and warm soapy water on the aluminium extrusion. We also recommend a soft sponge or cloth, again to avoid any risk of scratching. For full care and maintenance guidelines please refer to our comprehensive guide page 684.

IMPORTANT NOTE: The guide above is simplified, and should in no way be referenced in isolation. For full comprehensive substrate fixing details please refer through to the technical drawings.







The Metro MRS90 Bottom Sliding System is based upon top or bottom roller designs of single, double or triple sliding panels into a cavity.

- A natural anodisied finished bottom rail is available to suit 1250mm wide and 100kg weight. (Nylon Roller System).
- A brass finished bottom rail is available to suit 1250mm wide and 180kg weight. (Steel Roller System).

Material Finish

- Natural Anodisied or Brass Bottom Rail.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

The system is glazed with Metro Performance Glass, as follows:

- ▶ 10mm & 12mm TEMPAFLOAT® Toughened Safety Glass.
- ▶ Toughened Heat Soak Glass.
- ▶ Toughened Screen Print Glass
- ▶ Toughened Digital Print Glass.
- Glass must have a minimum strength of 100MPa. All edges polished.

Hardware

Refer to your local Metro Frameless Glass Stockist for advice. Or see Section 6.

Scope of Use

▶ The Metro MRS90 is an elegant frameless glass door system for internal applications that provide a minimalist look.



Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Metro MRS90

SUITABLE FOR INTERNAL ONLY. MAXIMUM Door weight 100kg (Nylon Roller System).

Nominal Glass	MAXIMUM Door Heights Span (mm) for Wind Zones																	
Thickness (mm)	Internal 0.5kPa			Low 0.72 kPa		Medium 0.96 kPa		High 1.36 kPa		Very High 1.76 kPa			Extra High					
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	4166	Yes	2000	4545	Yes	2000	5000	Yes	1800	5555	Yes			No			No
12mm TEMPAFLOAT®	2800	2976	Yes	2600	3205	Yes	2400	3472	Yes	2200	3787	Yes	2000	4166	Yes			No

Metro MRS90

SUITABLE FOR INTERNAL ONLY. MAXIMUM Door weight 180kg (Steel Roller System).

Nominal Glass Thickness (mm)	MAXIMUM Door Heights Span (mm) for Wind Zones																	
	Internal 0.5kPa			Low 0.72 kPa			Medium 0.96 kPa		High 1.36 kPa		Very High 1.76 kPa			Extra High				
	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	3000	Yes			No			No			No			No			No
12mm TEMPAFLOAT®	2800	2142	Yes			No			No			No			No			No



METRO MRS90 SLIDING DOOR SYSTEM

Bottom Rolling



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
METRO MRS90 SLIDING DOOR KIT	500033	1250mm Wide *Maximum Door Weight 180kg	ANOD NATURAL *Brass Bottom Track	ALUM 6063	BOTTOM ROLLING	NON LOCKING SLIDING DOOR	Internal
NON LOCKING VERSION	500034	1250mm Wide *Maximum Door Weight 100kg	ANOD NATURAL *Natural Anodisied Bottom Track		*Each Set includes (Bottom Sliding Rail, Bottom Track, Top Channel and 2		
10mm to 15mm ↓ 50 ↓ ↓		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		Channel Stops)		
							•
$\begin{array}{c} 57\\ 8\\ 8\\ 1\\ 20\\ 32\\ \end{array}$							
METRO MRS90 SLIDING DOOR KIT	500619	1250mm Wide *Maximum Door Weight 180kg	ANOD NATURAL *Brass Bottom Track	ALUM 6063	BOTTOM ROLLING	LOCKING SLIDING DOOR	Internal
	500620	1250mm Wide *Maximum Door Weight 100kg	ANOD NATURAL *Natural Anodisied Bottom Track		*Each Set includes (Bottom Sliding Rail, Bottom Track, Top Channel and 2		
10mm to 15mm 15mm		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		Channel Stops)		
	- -						

(Maximum Door Weight 180kg).

System can be used in single, bi-parting and multiple lines of sliding doors.

NOTE: Need to specify glass thickness on order, minimum glazing clearances shall apply.



METRO MRS90 SLIDING DOOR SYSTEM

Individual Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
METRO MRS90 RUBBER STOP	301010	40x29mm	BLACK	RUBBER	DOOR STOP	SLIDING DOOR COMPONENT	Internal
METRO MRS90 BOTTOM TRACK	301679 301011 301012 302084 302083	3000mm 4000mm 6000mm Per Metre Per Metre	ANOD NATURAL ANOD NATURAL ANOD NATURAL BRASS ON REQUEST: POWDERCOAT	ALUM & BRASS	BOTTOM TRACK	SLIDING DOOR COMPONENT	Internal
METRO MRS90 ADJUSTABLE STEEL ROLLER 200KG	302012	160x40mm	STEEL WITH STEEL WHEELS	STAINLESS STEEL	ROLLING GEAR	SLIDING DOOR COMPONENT	Internal
METRO MRS90 ADJUSTABLE NYLON ROLLER 100KG	301015	160x40mm	STEEL WITH NYLON WHEELS	NYLON	ROLLING GEAR	SLIDING DOOR COMPONENT	Internal
CHANNEL CS50	300332 300331	50 x 25mm 50 x 25mm GLASS THICKNESS: 10-12mm	ANOD NATURAL MILL FINISH ON REQUEST: POWDERCOAT	ALUM 6063	CHANNEL	CHANNEL SECTION	Internal
METRO MRS90 DOUBLE BOGIE RAIL BLOCKS ASSEMBLED	301014	300mm	MILL FINISH	ALUM 6063	ROLLING GEAR	SLIDING DOOR COMPONENT	Internal
WOOLPILE FIN SEAL	302005	4.8mm backing x 6.5m pile height	GREY	PBF48.650 FINSEAL	WOOLPILE	DOOR SEAL	Internal

ADDITIONAL: HANDLE SELECTION REQUIRED

(Refer Handle selection table for additional options) **NOTE:** Allowance must be made in the glass panel for cut out holes (Handle)



Metro MF75 BI-FOLDING / Sliding Door System

The Bi-Fold MF75 is designed for internal 10mm Toughened Safety Glass doors up to a maximum weight of 75 kg, and with maximum glass panes 2400 x 950mm. It is ideal for bi-folding room dividers and wall applications and works on a paired leaf system, where the door panels are folded on pivot hinges which hold the door at the ends of the door panel.

3

Key Features

The Bi-Fold MF75 can be used in two to six panels in one direction, and up to 12 panels in two directions, while locking is achieved by slide bolt (374), turn snib or key lock (343.1).

Material Finish

- Satin Chrome.
- Powdercoated on request. Note: Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

The system is glazed with Metro Performance Glass, as follows:

- Designed for 10-12mm TEMPAFLOAT® Toughened Safety Glass.
- ▶ Toughened Heat Soak Glass.
- ▶ Toughened Screen Print Glass.
- ▶ Toughened Digital Print Glass.
- Glass must have a minimum strength of 100MPa. All edges polished.

Hardware

Refer to your local Metro Frameless Glass Stockist for advice. Or see Section 6.

Scope of Use

Door sets are suitable for bi-folding internal room dividers and wall applications.



Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Metro MF75

SUITABLE FOR INTERNAL ONLY. MAXIMUM Door weight 75kg.

Nominal Glass		MAXIMUM Door Heights Span (mm) for Wind Zones																
Thickness (mm)	Internal 0.5kPa			Low 0.72 kPa			Medium 0.96 kPa			High 1.36 kPa			Very High 1.76 kPa			Extra High		
rinekness (ining	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits	Н	W	Suits
10mm TEMPAFLOAT®	2400	1250	Yes			No			No			No			No			No
12mm TEMPAFLOAT®	2400	892	Yes			No			No			No			No			No



METRO MF75 BI-FOLDING / SLIDING DOOR SYSTEM

Top Hung



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
METRO MF75	500028	2 Door Set	SC	ALUM 6063	TOP HUNG	BI-FOLDING	Internal
BI-FOLDING SLIDING DOOR	500029	3 Door Set	SC		*Each Set includes	SLIDING DOOR	M
КІТ	500030	4 Door Set	SC		(Track, Top Channel, Pivot Set, Hangers,		
	500031	5 Door Set	SC		Guide Hinges, and Bottom Locks)		•••
50	500032	6 Door Set	SC				
Doors fold this way		*Specify Left hand or Right Hang pivoting end GLASS THICKNESS: 10mm	ON REQUEST: POWDERCOAT				

(Maximum Door Weight 75kg).

ADDITIONAL: HANDLE SELECTION REQUIRED (FOR UNEVEN DOOR SETS END DOOR CAN BE FITTED WITH LATCH OR LOCKSET) (Refer Handle selection table for additional options)

NOTE: Allowance must be made in the glass panel for cut out holes (Handle), minimum glazing clearance shall apply.

Description	
Door kit for two doors L/H set shown	
Door kit for three doors L/H set shown	
Door kit for four doors R/H set shown	
Door kit for five doors R/H set shown	
Door kit for six doors L/H set shown	

NOTE: For uneven Door sets, end door can be fitted with latch or lockset. See Hardware section. Specify left hand or right hand pivoting end. Glass door preparation drawings are available on request.



METRO MF75 BI-FOLDING / SLIDING DOOR SYSTEM

Individual Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
METRO MF75 BOTTOM BOLT	300983	60 x 25 x 40mm	ANOD NATURAL			BI-FOLDING	Internal
LOCK PLUS KEEPER					AND KEEPER	SLIDING DOOR COMPONENT	\mathbf{M}
Ī							

ADDITIONAL: HANDLE SELECTION REQUIRED (FOR UNEVEN DOOR SETS END DOOR CAN BE FITTED WITH LATCH OR LOCKSET)

(Refer Handle selection table for additional options)

NOTE: Allowance must be made in the glass panel for cut out holes (Handle)







Door Seals and Components For use with Frameless Sliding and pivot systems

Thermal efficiency, acoustic performance and reduced air leakage are all critical in products designed for modern living. Commercial sliding and pivot door seals provides a seal between frameless glass moving components.



3



Key Features

- Suitable for manual or automatic doors.
- Slim Profile.
- Will reduce drafts.
- Assist in noise reduction.
- Self-adhesive application.
- Available with differing woolpile lengths.

Anodisied Aluminium Section

- Silver Anodisied Aluminium Finish
- Suits 10-12mm glass thickness
- Polypropylene grey woolpile (Inline Seal)
- Polypropylene grey woolpile (90-degree Seal)
 For creating a seal back to a sliding door, side panel or wall.
- Attaches to sliding door jamb to provide a tight seal.



Clear Polycarbonate Section:

- Suits a 10, 12 or 15mm glass thickness
- Clear Polypropylene black woolpile (Inline Seal)

Scope of Use

Woolpile and brush technology is utilised to provide a tight seal across frameless door systems.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



DOOR SEALS AND COMPONENTS

For use with frameless sliding and pivot systems



Droduct	Madal	Cizee mm	Finich	Matanial	Tupo	Application	A n o o
Product ALUMINIUM 90°	Model 301334	Sizes mm 12mm thick	Finish ANOD SILVER	Material ALUM 6063	Type DOOR SEAL WITH	Application BI-FOLDING	Area Internal/
DOOR INLINE	301333	10mm thick	ANOD SILVER	ALUM 6063	POLYPROPYLENE	SLIDING	External
	001000	Overall	ON REQUEST:		GREY WOOLPILE	DOOR SEAL COMPONENT	
		Length=	POWDERCOAT			*Includes double	BI-FOLDING SLIDING
12		3000mm				sided adhesive foam tape.	PIVOT DOOR SEAL
							MANUAL OR AUTOMATIC
							DOORS
	301350	10mm thick	CLEAR				latara d (
CLEAR POLYCARBONATE	301350	12mm thick	CLEAR	POLYCARBONATE	CHANNEL	CHANNEL SECTION	Internal/ External
DOOR INLINE SEAL	301352	15mm thick	CLEAR				
- 8	00100E	Overall	OLEAN				BI-FOLDING SLIDING
		Length=					PIVOT DOOR SEAL
		3000mm					_
							MANUAL OR AUTOMATIC
							DOORS
- 4 - 13							
8							
12							
4 13							
ALUMINIUM 90	301336	12mm thick	ANOD SILVER	ALUM 6063	DOOR SEAL	BI-FOLDING	Internal /
DEGREE DOOR SEAL	301335	10mm thick	ANOD SILVER		*Polypropylene grey woolpile not included)	SLIDING DOOR SEAL	External
			ON REQUEST:		woolplie not included)	COMPONENT	BI-FOLDING
			POWDERCOAT			*Includes double sided adhesive	SLIDING PIVOT DOOR
						foam tape.	SEAL
							MANUALOR
							AUTOMATIC DOORS
INLINE DOOR	501150	10mm thick	WOOLPILE	ALUM 6063	DOOR SEAL	BI-FOLDING	Internal/
SEAL	501157	12mm thick	WOOLPILE			SLIDING DOOR SEAL	External
						COMPONENT	BI-FOLDING
							SLIDING PIVOT DOOR
18							SEAL
							MANUALOR
							AUTOMATIC DOORS

ADDITIONAL: CHANNEL SELECTION MAYBE REQUIRED

(Refer Frameless Internal Partitions and Structural Walls selection table for additional options) **NOTE:** Setting Blocks and Pan Screws available for fixing.

3

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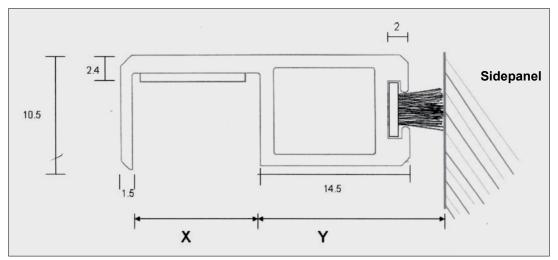


DOOR SEALS AND COMPONENTS

For use with frameless sliding and pivot systems

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
90 DEGREE DOOR SEAL	501151	10mm thick 18mm gap	WOOLPILE	ALUM 6063	DOOR SEAL	BI-FOLDING SLIDING DOOR SEAL COMPONENT	Internal/ External
	501152	10mm thick 20mm gap	WOOLPILE				BI-FOLDING SLIDING PIVOT DOOR SEAL
	501153	10mm thick 23mm gap	WOOLPILE				
	501154	10mm thick 26mm gap	WOOLPILE				MANUAL OR AUTOMATIC DOORS
	501155	10mm thick 28mm gap	WOOLPILE				
	501156	10mm thick 32mm gap	WOOLPILE				
	501158	12mm thick 18mm gap	WOOLPILE				
	501159	12mm thick 20mm gap	WOOLPILE				
	501160	12mm thick 23mm gap	WOOLPILE				
	501161	12mm thick 26mm gap	WOOLPILE				
	501162	12mm thick 28mm gap	WOOLPILE				
	501163	12mm thick 32mm gap	WOOLPILE				

Example:



KEY:

X= Glass Thickness

Y= Woolpile (just touches side panel)

Note: 90° Door Inline seal provides a seal between Frameless glass sliding door panels and sidelights or walls.

3

HARDWARE





DOOR SEALS AND COMPONENTS

For use with frameless sliding and pivot systems



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
	300008	3mm pile height 6.9mm backing	GREY	ADHESIVE BACKING	DOOR SEAL	BI-FOLDING SLIDING DOOR SEAL COMPONENT	Internal/ External BI-FOLDING
	300009	5.25mm pile height 6.9mm backing	GREY				SLIDING PIVOT DOOR SEAL MANUAL OR AUTOMATIC DOORS
WOOLPILE FINSEAL	302164	12.75mm pile height 6.9mm backing	BLACK	FINSEAL	DOOR SEAL	BI-FOLDING SLIDING DOOR SEAL COMPONENT	Internal/ External
	302005	6.5mm pile height 4.8mm backing	GREY				BI-FOLDING SLIDING PIVOT DOOR SEAL
	302006	7.5mm pile height 4.8mm backing	GREY				MANUAL OR AUTOMATIC DOORS
WOOLPILE SKIRTING SEAL	301997	per metre	BLACK	PR13	DOOR SEAL	BI-FOLDING SLIDING DOOR SEAL COMPONENT	Internal/ External
							BI-FOLDING SLIDING PIVOT DOOR SEAL MANUAL OR AUTOMATIC DOORS
WOOLPILE SKIRTING SEAL	302000	11mm pile height 4.8mm backing	BLACK	SKIRTING SEAL	DOOR SEAL	BI-FOLDING SLIDING DOOR SEAL COMPONENT	Internal/ External BI-FOLDING
	302001	11mm pile height 4.8mm backing	GREY				SLIDING PIVOT DOOR SEAL
	302002	13mm pile height 4.8mm backing	GREY				MANUAL OR AUTOMATIC DOORS
	302003	16mm pile height 4.8mm backing	GREY				
	302004	6.5mm pile height 4.8mm backing	GREY				









Frameless Internal Partitions and Walls

Metro's Frameless glass screens and doors are available in extremely large sizes to complement any bespoke system design. "With the use of acoustic reduction glass you can create glass partitions that are highly insulating against noise travel between spaces."







Frameless Internal Partitions and Walls

PRODUCT OVERVIEW 400 **INTERNAL PARTITIONS AND WALLS** 402 Santoprene™ Slim-line Series Equivalent 402 Stainless Steel Fin Brackets 403 Channel Sections 404 Packers / Typical Fixings / Setting Blocks Components 409

AREA ICONS KEY:



SHOWERS







SLIDING DOOR

WALL





Frameless Internal Partitions and Internal Walls

Internal glass partitions and walls are becoming increasingly popular for the home and office, where interior design has moved towards open spaces and modern, light-filled rooms. We supply internal glass partitions that create a smooth, seamless barrier within your existing space that gives the illusion of openness.

We offer a range of glass partitions, walls and panels from single glazed safety glass through to double and thermal glazed partitions. We offer many styles and options to suit your space and decor, such as frosting, tinting, coloured and patterned glass to cover sections or entire panels – your imagination is the limit.





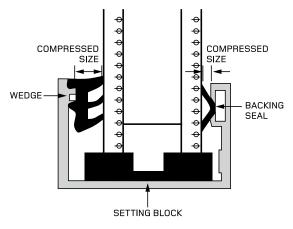
Key Features

- Partitions can be custom fitted to spaces of all shapes and sizes.
- All glass joints can be connected with clear joints for a seamless transparent glass installation.
- ▶ Get the illusion of a larger space.
- > Reduce power bills for lighting with more natural light.
- ▶ Instantly modernise your space with an architectural look.
- ▶ Help reduce noise levels.

Types

- CS40 40 x 20mm Channel Aluminium Extrusion.
- CS25 25 x 20mm Channel Aluminium Extrusion.
- CS18 19 x 18mm Channel Aluminium Extrusion.
- CSR18 25 x 18mm Channel Aluminium Extrusion.
- CS15 18 x 15mm Channel Aluminium Extrusion.
- AS18 19 x 15mm Angled Extrusion.
- CS234 40 x 30mm Two Piece Channel Section.
- CS134 40 x 30mm Channel Aluminium Extrusion.
- CS244 40 x 40mm Two Piece Channel Section.
- CS144 40 x 40mm Channel Aluminium Extrusion.
- CS255 50 x 50mm Two Piece Channel Section.
- CS155 50 x 50mm Channel Aluminium Extrusion.

- Channel Designs –Various to suit glass thickness and weights.
- End Caps Various to suit channel designs.
- Universal Joiners available.
- Glazing Wedges, Backing Seals and Setting Blocks (Santoprene).



Setting Blocks

- ▶ Material is a specific mixture of Santoprene™ with added polypropylene to increase hardness.
- Hardness Shore A 80 approximate.
- Channels are available in bright (internal) and natural silver anodisied 20 micron, standard finishes.
- Special colours Powder coated on request

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
GLAZING BACKING SEAL & WEDGES	301892	10.9 x 4.9mm Compressed size 4mm (per metre)	BLACK	SANTOPRENE	DYNEX 9287	BACKING SEAL	Internal 8 External
J	302022	11.5 x 4mm Compressed size 2.5mm (per metre)	BLACK				



Santoprene™ Slim-line Series Equivalent

WEDGES	MODEL	COLOUR STRIPE	COIL LENGTH	PVC EQUIVALENT	COMPRESSED SIZE
Ŧ	90425BLK400	BLUE	400m	40425BLK400	2.5mm
ł	90430BLK250		250m	40430BLK250	3.0mm
Ŧ	90435BLK250	RED	250m	40435BLK250	3.5mm
Ŧ	90440BLK250	ORANGE	250m	40445BLK250	4.0mm
Ŧ	90445BLK250	YELLOW	250m	40445BLK250	4.5mm
Ŧ	90450BLK250	WHITE	250m	40450BLK200	5.0mm
Ħ	90455BLK250	GREEN	150m	40455BLK150	5.5mm
Ŧ	90460BLK250	BROWN	150m	40460BLK150	6.0mm
Ŧ	90470BLK250	BLACK	150m	40470BLK150	7.0mm

Santoprene™

- High-performance material.
- Superior high and low temperature resistance, compression set resistance.
- Superior weathering and UV resistance.
- Suitable for three storeys and over.
- Compatible with polycarbonate.
- Able to be coextruded with polypropylene.

The system is glazed with Metro Performance Glass, as follows

- 10 34mm Toughened Safety Glass Depending on Channel, Glazing Wedges, Backing Seals and Setting Blocks Selected.
- Toughened Heat Soak Glass.
- Toughened Screen Print Glass.
- Toughened Digital Print Glass.

Scope of Use

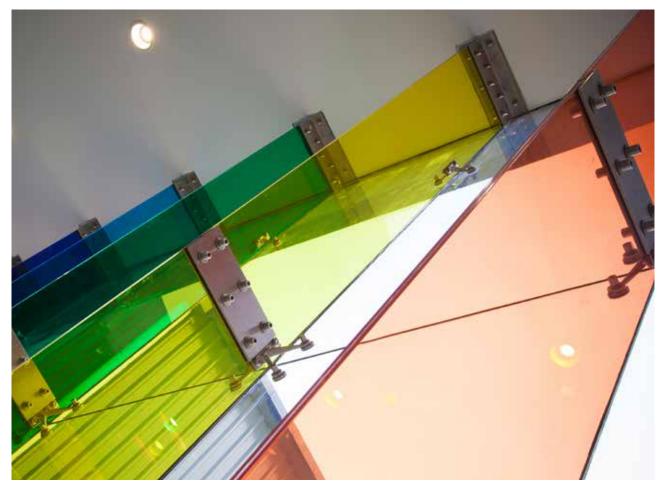
Partitions which can include printed or decorative inserts, fixed partition walls of U Channel and switchable glass to flick between clear and opaque.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

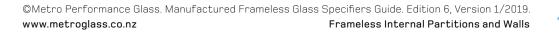


Stainless Steel Fin Brackets



Fins generally made of glass (for maximum transparency) supporting glass walls offer the most transparency in single or double glazed wall situation. The support structure holding up the large panels of glass is very minimal. Metro Performance Glass have two standard fin brackets available with custom made brackets available upon request.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
FIN BRACKET SET	300105	250x65x65x6	SS	316 STAINLESS	FIN BRACKET	FIN BRACKET	Internal &
*Option to	300106	300x65x65x6	SS	STEEL		COMPONENT	External
support a 250mm or 300mm Glass Fin) *Substrate Fixings not included						*Custom made length fin brackets are available upon request.	







Channel Sections:

(Internal Partitions, Structural Walls, Showers, Sliding Hinged Pivot Doors)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
CHANNEL	300317	2500mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
CS25	300320	5000mm	ANOD NATURAL			SECTION	External
15	300319	5000mm	MILL FINISH				
	300318	5000mm	BLACK				
	300321	5000mm	ARCTIC WHITE				IШI
25	301869	Per Metre	ANOD NATURAL				in l
20		SUGGESTED GLASS THICKNESS: Up to 10mm	ON REQUEST: POWDERCOAT				
END CAP	300481	25 x 20mm	ANOD NATURAL	ALUM 6063	END CAP	END CAP	Internal &
CC25	300482	25 x 20mm	SS			COMPONENT	External
						SUITS:	
No.						CS25 CHANNEL	
CHANNEL CS40	300326	2500mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
15	300329	5000mm	ANOD NATURAL			SECTION	External
	300328	5000mm	MILL FINISH				
	300327	5000mm	BLACK				i na i
	300330	5000mm	ARCTIC WHITE				ļΨ
₹		SUGGESTED GLASS THICKNESS: Up to 10mm	ON REQUEST: POWDERCOAT				
END CAP	300483	40 x 20mm	ANOD NATURAL	ALUM 6063	END CAP	END CAP	Internal &
CC40	300484	40 x 20mm	SS			COMPONENT	External
						SUITS: CS40 CHANNEL	
CHANNEL	300301	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
CS18	300303	2100mm	ANOD NATURAL			SECTION	External
15	300302	2100mm	MILL FINISH				
	300304	2100mm	BLACK				
19	301851	2100mm	ARCTIC WHITE				ļΨ
	300305	3000mm	ANOD BRIGHT				
	300307	3000mm	ANOD NATURAL				
10	300306	3000mm	MILL FINISH				
	300308	3000mm	BLACK				
	301672	3000mm	ARCTIC WHITE				
		SUGGESTED GLASS THICKNESS: Up to 10mm	ON REQUEST: POWDERCOAT				Ï



Channel Sections:

(Internal Partitions, Structural Walls, Showers, Sliding Hinged Pivot Doors)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
CHANNEL	301674	3000mm	PC	ALUM 6063	CHANNEL	CHANNEL	Internal &	
CSR18	301673	3000mm	ANOD NATURAL			SECTION	External	
1.7. 14.6 1.7 17. 14.6 1.7 17. 14.6 1.7 18. 17. 14.6 1.7		SUGGESTED GLASS THICKNESS: Up to 10mm OVERALL SIZE: 18 X 25MM	ON REQUEST: POWDERCOAT					
	200.470	10:10:1					لاً ا	
END CAP CC18	300478	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP COMPONENT	Internal & External	
And Ar	300480	18x18x1mm	ANOD NATURAL			SUITS:	LACEITIA	
	300479	18x18x1mm	MILL FINISH			CS18, CSR18 CHANNEL		
END CAP CC18	300485	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &	
END CAP CC18 SUITS 45 DEGREE MITRE CUT	300486	18x18x1mm	ANOD NATURAL				COMPONENT	External
	301714	18x18x1mm	MILL FINISH			SUITS: CS18, CSR18, CS25, CS40 CHANNEL		
-						CS40 CHANNEL		
CHANNEL	300287	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &	
CS15	300289	2100mm	ANOD NATURAL			SECTION	External	
€ 11.50	300288	2100mm	MILL FINISH					
	300290	2100mm	BLACK					
	301849	2100mm	ARCTIC WHITE				ĮШ	
18	300291	3000mm	ANOD BRIGHT				n n	
	300293	3000mm	ANOD NATURAL					
	300292	3000mm	MILL FINISH					
15	300294	3000mm	BLACK					
	301668	3000mm	ARCTIC WHITE				11	
	301850	3000mm	BLACK				T	
		SUGGESTED GLASS THICKNESS: Up to 6mm	ON REQUEST: POWDERCOAT				₽	
END CAP CC15	300474	15x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &	
	300475	15x18x1mm	ANOD NATURAL			COMPONENT	External	
6						SUITS: CS15 CHANNEL		
ANGLE AS18	300277	2500mm	ANOD BRIGHT	ALUM 6063	ANGLE	ANGLE	Internal &	
	300278	2500mm	ANOD NATURAL			SECTION	External	
	300276	2500mm	MILL FINISH ON REQUEST: POWDERCOAT					







Channel Section: 40x30mm

(Internal Partitions, Structural Walls, Showers, Sliding Hinged Pivot Doors)

					_		
Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
TWO PIECE CHANNEL CS234 KIT	500241 500242	40 x 30mm 40 x 30mm	ANOD NATURAL MILL FINISH	ALUM 6063	CHANNEL	CHANNEL SECTION	Internal & External
(HEAD SECTION)		GLASS THICKNESS: 8 – 12mm 19mm glazing	ON REQUEST: POWDERCOAT			COMPONENTS 5000mm Channel	
		pocket				500608 (MILL FINISH)	
40 (F)						500609 (ANOD NATURAL) Bead	
						300309 (MILL FINISH)	Ĭ
- pro-						300310 (ANOD NATURAL)	
CHANNEL CS134	300312	40 x 30mm	ANOD NATURAL	ALUM 6063	CHANNEL	CHANNEL	Internal &
(BASE SECTION)	300311	40 x 30mm	MILL FINISH			SECTION	External
		GLASS THICKNESS: 8 – 12mm	ON REQUEST: POWDERCOAT				
		19mm glazing pocket					
38	300835	40x40x1.0mm	SS				Ι
90 DEGREE JOINER	300835	4024021.0000		STAINLESS STEEL	JOINER	CHANNEL JOINER COMPONENT	SUITS CHANNEL: CS234 CS244 CS255
180 DEGREE	300837	50x13mm	SS	STAINLESS	JOINER	CHANNEL	SUITS
				STEEL		JOINER COMPONENT	CHANNEL: CS234 CS244 CS255
180 DEGREE	300833	70x25x2.0mm	SS	STAINLESS	JOINER	CHANNEL	SUITS
INLINE BASE JOINER				STEEL		JOINER COMPONENT	CHANNEL: CS234
BASE FIX MITRE 90 DEGREE CORNER	300834	57x70mm	SS	STAINLESS STEEL	JOINER	CHANNEL JOINER COMPONENT	SUITS CHANNEL: CS234
END CAP	300455	40 x 30mm	NATURAL	ALUM 6063	END CAP	END CAP COMPONENT	SUITS CHANNEL:
							CS234
FIN END CAP	300454	38x30mm	NATURAL	ALUM 6063	FIN END CAP	END CAP COMPONENT	SUITS CHANNEL: CS234



Channel Section: 40x40mm

(Internal Partitions, Structural Walls, Showers, Sliding Hinged Pivot Doors)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
TWO PIECE	500243	40 x 40mm	ANOD NATURAL	ALUM 6063	CHANNEL	CHANNEL	Internal &
CHANNEL CS244 KIT	500244	40 x 40mm	MILL FINISH			SECTION	External
(HEAD SECTION)		GLASS THICKNESS: 15 – 19mm	ON REQUEST: POWDERCOAT			COMPONENTS 5000mm	
		29mm glazing pocket				Channel 500610 (MILL FINISH)	
•						500611 (ANOD NATURAL)	
1 Test						Bead 300313 (MILL FINISH)	
						300314 (ANOD NATURAL)	
CHANNEL CS144	300316	40 x 40mm	ANOD NATURAL	ALUM 6063	CHANNEL	CHANNEL	Internal &
(BASE SECTION)	300315	40 x 40mm	MILL FINISH			SECTION	External
altair Internet		GLASS THICKNESS: 15 – 19mm 29mm glazing pocket	ON REQUEST: POWDERCOAT				
90 DEGREE JOINER	300835	40x40x1.0mm	SS	STAINLESS	JOINER	CHANNEL	SUITS
JOINER				STEEL		JOINER COMPONENT	CHANNEL: CS234 CS244 CS255
180 DEGREE	300837	50x13mm	SS	STAINLESS	JOINER	CHANNEL	SUITS
INLINE JOINER				STEEL		JOINER COMPONENT	CHANNEL: CS234 CS244 CS255
180 DEGREE	300838	70x34x2.0mm	SS	STAINLESS	JOINER	CHANNEL	SUITS
INLINE BASE JOINER				STEEL		JOINER COMPONENT	CHANNEL: CS244
BASE FIX MITRE	301741	35x35x2.0mm	SS	ALUM 6063	JOINER	CHANNEL	SUITS
90 DEGREE CORNER						JOINER COMPONENT	CHANNEL: CS244
END CAP	300456	40x40mm	NATURAL	ALUM 6063	END CAP	END CAP	SUITS
						COMPONENT	CHANNEL: CS244
FIN END CAP	300457	38x40mm	NATURAL	ALUM 6063	FIN END CAP	END CAP COMPONENT	SUITS CHANNEL: CS244
		1					

4

ARDWARE





Channel Section: 50x50mm

(Internal Partitions, Structural Walls, Showers, Sliding Hinged Pivot Doors)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
TWO PIECE	500245	50 x 50mm	ANOD NATURAL	ALUM 6063	CHANNEL	CHANNEL	Internal &
CHANNEL CS255 KIT	500246	50 x 50mm	MILL FINISH			SECTION	External
(HEAD SECTION)		GLASS THICKNESS:	ON REQUEST: POWDERCOAT			COMPONENTS 5000mm	
		25mm				Channel	
1		38mm glazing pocket				Channel 500612	
ESm .						(MILL FINISH)	i L
8						500613 (ANOD NATURAL)	
1 . E .						Bead	
						300322	
						(MILL FINISH)	T
						300323	
CHANNEL CS155	300325	50 x 50mm	ANOD NATURAL	ALUM 6063	CHANNEL	(ANOD NATURAL)	Internal &
(BASE SECTION)	300324	50 x 50mm	MILL FINISH	/12011/0000	OTHINITEE	SECTION	External
		GLASS	ON REQUEST:				
		THICKNESS:	POWDERCOAT				הלה
2 12		25mm 38mm glazing					ΨΨ
		pocket					
LE							
*** E							
90 DEGREE	300835	40x40x1.0mm	SS	STAINLESS	JOINER	CHANNEL	SUITS
JOINER				STEEL	JUINEN	JOINER	CHANNEL:
						COMPONENT	CS234 CS244
1							CS255
180 DEGREE	300837	50x13mm	SS	STAINLESS	JOINER	CHANNEL	SUITS
INLINE JOINER				STEEL		JOINER COMPONENT	CHANNEL: CS234
1							CS244
							CS255
180 DEGREE	300840	70x43x2.0mm	MILL FINISH	ALUM 6063	JOINER	CHANNEL	SUITS
INLINE BASE JOINER						JOINER COMPONENT	CHANNEL:
							CS255
BASE FIX MITRE	300841	50x50x2.0mm	MILL FINISH	ALUM 6063	JOINER	CHANNEL	SUITS
90 DEGREE					JUINER	JOINER	CHANNEL:
CORNER						COMPONENT	CS255
	200407	E0 × E0	ΝΑΤΗΡΑΙ				
END CAP	300487 301715	50 x 50mm 50 x 50mm	NATURAL PC	ALUM 6063	END CAP	END CAP COMPONENT	SUITS CHANNEL:
	301/13	30 x 301111					CS255
Provide State							



Packers / Typical Fixings / Setting Blocks Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SETTING BLOCK	301044	15 x 17 x 50mm	BLACK	SANTOPRENE	SETTING BLOCK	CHANNEL SECTION COMPONENT	Internal 8 External
PAN HEAD SCREWS	301210 301310	25mmx10g 35mmx10g	SS SS	304 STAINLESS STEEL	SCREW FIXING	CHANNEL SECTION	Internal & External
	301242	50mmx10g	SS			FIXING COMPONENT	
PLASTIC PACKERS	301049 301051 301052 301053 301054 301055 301050	1.5mm 2mm 3mm 4mm 5mm 6mm 10mm	VARIOUS COLOURS VARIOUS COLOURS VARIOUS COLOURS VARIOUS COLOURS VARIOUS COLOURS VARIOUS COLOURS	PLASTIC	PACKER	PLASTIC PACKER COMPONENT	Internal & External
SILICONE SPATULA	300007	96x91x8mm	RED	SILICONE PLASTIC	SILICONE BEAD SPREADER	SMOOTHER FOR SILICONE BEADS	Internal 8 External

4

HARDWARE WARRANTY



www.metroglass.co.nz







Frameless Showers

Our showers are custom made to suit your bathroom layout. Whether it requires hinged or sliding doors, angled panels or notch cut-outs, we deliver the best solution. Shower hardware can be matched to your other bathroom fittings and/or decor.







Frameless Showers

PRODUCT OVERVIEW	414
OZONE SLIDING SHOWER DOOR	416
BANIO – SOFT CLOSE SLIDING	
SHOWER DOOR	426
HINGED SHOWER DOORS	430
WALK-IN/GLASS SHOWER SCREENS	444
GLASS BATH SCREENS	454



AREA ICONS KEY:



SHOWERS



BATH

SCREENS





DOORS







DOORS





6

-

PRODUCT OVERVIEW

Frameless Showers (Hinged, Screen, Sliding and Soft Close incl Glass Shelves)

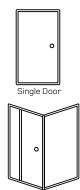
A glass shower screen delivers timeless elegance, custom designed to suit your bathroom. The clean lines and design simplicity provide the least visual intrusion and the maximum light flow. Even small bathrooms feel larger, and the minimal use of fittings and seals means less areas for unsightly mould to build. Metro is able to offer various hinged, sliding and soft close options to suit a broad range of applications.

Combined with Ezyclean® Technology, Clearvision®, decorative glass and a number of hardware options we have a solution to suit every application.

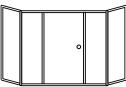
à

Hinged Door

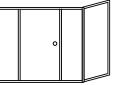
Enclosed showers separate the shower water from the rest of the room. There is also the ability to have coloured hinges and handles.



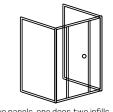
Three panels, one door, one infill, one square return



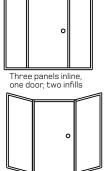
o Two panels inline one door, one an infill

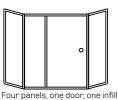


Four panels, one door, two infills, one square return

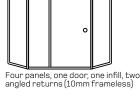


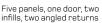
Five panels, one door, two infills, two square returns, optional stabilising shelf return





Three panels, one door, two angled returns, optional stabilising shelf or rod (10mm frameless) 0 Bath Hob and infill



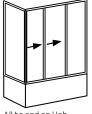


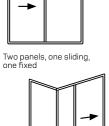
Sliding Door

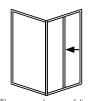
Enclosed showers with a sliding door combine the benefits of a small footprint like a Walk-in shower while also closing the wet area off from the rest of the bathroom.



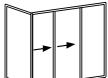
Three panels, two sliding, one fixed

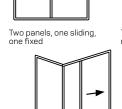


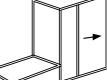


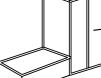


Five panels, two sliding, one fixed, one square return





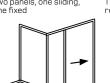


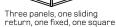


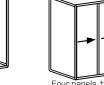
Bath Hob

All to end on Hob





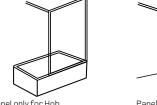




Four panels, two sliding, one fixed, one square return

Walk-In

Walk-in showers are convenient and easy to access particularly in small bathrooms.





Panel only for Hob

Panel only/Panel only with rod

Design Guidance Frameless Showers

Our showers are custom made to suit your bathroom layout. Whether it requires hinged or sliding doors, angled panels or notch cut-outs, we deliver the best solution. Shower hardware can be matched to your other bathroom fittings and/or decor.

Typical Shower Designs:

- Inline Showers
- Square Showers
- Quadrant Showers ►
- Sliding Showers Curved Shower

- Bath End Shower
- Bifold Bath Screen

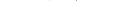
EzyClean (Used in Showers)

EzyClean is an optically clear protective coating that chemically bonds to the glass surface, creating a non-stick barrier resistant to corrosion, etching, and staining. However, while cleaning is made easier and less frequent, the need to clean is not eliminated. Treated glass becomes both hydrophobic and oleophobic (water and oil repellent) protecting against most forms of dirt and grime. The molecule is highly resistant to chemical breakdown by UV light giving it long term stability. This protection thereby reduces staining and etching that often forms on shower recesses.

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Ozone Sliding Shower Door (Top Hung)

An inline Ozone Sliding Shower is an ideal solution for a smaller space. There are multiple arrangements and configurations possible.





Key Features

- Finish: Bright polished stainless steel.
- Maximum door weight: 45kg.
- Maximum door height: 2000mm is typically standard (Determined by glass weight).
- To meet the multi configuration requirements of modern bathrooms, our Ozone Sliding Shower has been specifically designed to allow you to design for wall-to-wall, wall-toglass and glass-to glass applications.

The system is glazed with Metro Performance Glass, as follows:

- 8mm & 10mm TEMPAFLOAT® Toughened Safety Glass.
- Toughened Heat Soak Glass.
- ▶ Toughened Screen Print Glass.
- Toughened Digital Print Glass.
- Clearvision Glass for an ultraclear look.

Optional Extras

You can add glass shelves, sweeps or protect your shower with an EzyClean Coating - designed to enable glass to have less contact with dirt, making your shower easy to clean and reducing limescale and grime.

EzyClean Technology

- Applied in our state-of-the-art manufacturing facilities, Metro's unique EzyClean Technology provides a protective coating that creates a long lasting, invisible shield on your home's glass surfaces.
- Water will simply bead off the glass surface, resulting in cleaning time being significantly reduced. And it also makes cleaning simple, only requiring the use of water and a mild detergent with a microfibre cloth.
- Compared to ordinary glass, Metro EzyClean Technology:
 resists staining from hard water deposits.
 - does not support the growth of bacteria.
 - eliminates the need for harsh and abrasive cleaning products.
 - protects against the build-up of soap scum, body oils, dirt, and grime.

Scope of Use

- The sliding door removes the obstacle of a swinging door in tight spaces and creates an expansive shower area with easy access.
- Enclosed showers with a sliding door combine the benefits of a small footprint like a walkin shower while also closing the wet area off from the bathroom.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



FRAMELESS SHOWERS



Ozone – Sliding Shower Door Standard Kits

(Track, Track fixing bracket, Hangers, Anti Jump Buttons, Side Panel Fixing Brackets, Wheels, Stop and Guide)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
OZONE SHOWER	301043	UP TO 2000mm	PSS	304 STAINLESS	SHOWER	SLIDING DOOR	Internal &
		GLASS THICKNESS: 8-10mm DOORS= Max 45Kgs		STEEL	FIXING: GLASS TO WALL WALL TO WALL GLASS TO GLASS		External
OZONE SHOWER	300234	37x24mm	PSS	304 STAINLESS	ADDITIONAL	SLIDING DOOR	Internal &
BUTTON SUPPORT				STEEL	BUTTON SUPPORTS	COMPONENT SUITS COMPONENT: 301043	External
OZONE SHOWER	301757	53 x 23mm	PSS	304 STAINLESS	SHOWER	SLIDING DOOR	Internal &
FLOOR GUIDE			ON REQUEST: POWDERCOAT	STEEL	GLASS FLOOR GUIDE	COMPONENT SUITS COMPONENT: 301043	External
OZONE SHOWER	301759	32x25 mm dia.	PSS	304 STAINLESS	TRACK MOUNT	SLIDING DOOR	Internal &
TRACK MOUNT			ON REQUEST: POWDERCOAT	STEEL		COMPONENT SUITS COMPONENT: 301043	External
OZONE SHOWER	301760	34x38mm dia.	PSS	304 STAINLESS	WHEEL/	SLIDING DOOR	Internal &
WHEEL / ROLLER			ON REQUEST: POWDERCOAT	STEEL	ROLLER	COMPONENT SUITS COMPONENT: 301043	External

NOTES:

To complete the ozone door system, the following components may also be required dependant on application. **ADDITIONAL: HANDLE OR KNOB SELECTION REQUIRED.** (Refer Handle selection table for additional options) **NOTE:** Allowance must be made in the glass panel for cut out holes (Handle or Knob)



FRAMELESS SHOWERS

Additional Components – Hardware List

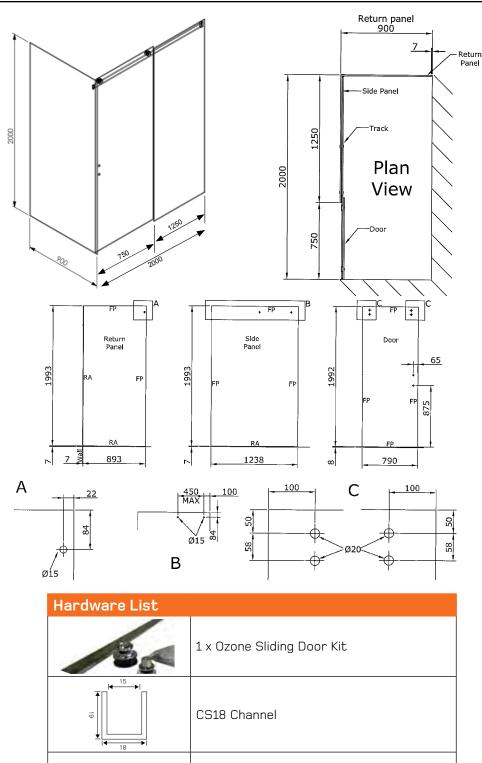
Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ANGLED WATER	300279	1400mm	ANOD BRIGHT	ALUM 6063	WATER BAR	FLOOR WATER	Internal &
BAR	300281	1400mm	ANOD NATURAL			SEAL*	External
		OVERALL SIZE: 16 x6mm	ON REQUEST: POWDERCOAT			*Aluminium Floor Mounted Water	
		10 X011111	TOWDERCOAL			Bar.	•
CHANNEL CS18	300301	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
15	300303	2100mm	ANOD NATURAL			SECTION	External
1 1	300302	2100mm	MILL FINISH				
19	300304	2100mm	BLACK				•
	301851	2100mm	ARCTIC WHITE				
	300305	3000mm	ANOD BRIGHT				
18	300307	3000mm 3000mm					
	300306 300308	3000mm	MILL FINISH BLACK				
	301672	3000mm	ARCTIC WHITE				
	- 5010/L	GLASS	ON REQUEST:				
		THICKNESS: 12mm	POWDERCOAT				
CHANNEL CSR18	301674	3000mm	PC	ALUM 6063	CHANNEL	CHANNEL	Internal &
17 - 146 - 17	301673	3000mm	ANOD NATURAL			SECTION	External
885 C152		GLASS THICKNESS: 12 & 15mm	ON REQUEST: POWDERCOAT				
•		OVERALL SIZE: 18 x 25mm					
END CAP CC18	300478	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
END CAT COID	300480	18x18x1mm	ANOD NATURAL		LIND CAI	COMPONENT	External
	300479	18x18x1mm	MILL FINISH			SUITS: CS18 CHANNEL	
END CAP CC18	300485	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
To SUIT 45 DEGREE MITRE CUT	300486	18x18x1mm	ANOD NATURAL	ALOW 0000		COMPONENT	External
	301714	18x18x1mm	PC			SUITS: CS18 CHANNEL	
							1 .
CHANNEL CS15	300287	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
11.50	300289	2100mm	ANOD NATURAL			SECTION	External
	300288	2100mm	MILL FINISH				
	300290	2100mm	BLACK				1
	301849	2100mm	ARCTIC WHITE				
	300291	3000mm	ANOD BRIGHT				
	300293	3000mm					
10	300292 300294	3000mm 3000mm	MILL FINISH BLACK				
	300294	3000mm 3000mm	ARCTIC WHITE				
	301850	3000mm	BLACK				
		GLASS THICKNESS: 8mm	ON REQUEST: POWDERCOAT				
END CAP CC15	300474	15x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
	300475	15x18x1mm	ANOD NATURAL			COMPONENT SUITS: CS15 CHANNEL	External
	200277	2500mm					•
ANGLE AS18 → ∩	300277 300278	2500mm 2500mm	ANOD BRIGHT ANOD NATURAL	ALUM 6063	ANGLE	ANGLE SECTION	Internal & External
	300278	2500mm 2500mm	MILL FINISH				-
19	3002/0	230011111					
◀ 18							



HARDWARE WARRANTY







NOTE: Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel. Clear opening 655mm - subject to handle type. Max door weight 45kgs. Isometric shows a left hand door plan and glass drawings are for right hand door.

AS6 Water Bar

CS18 End Cap



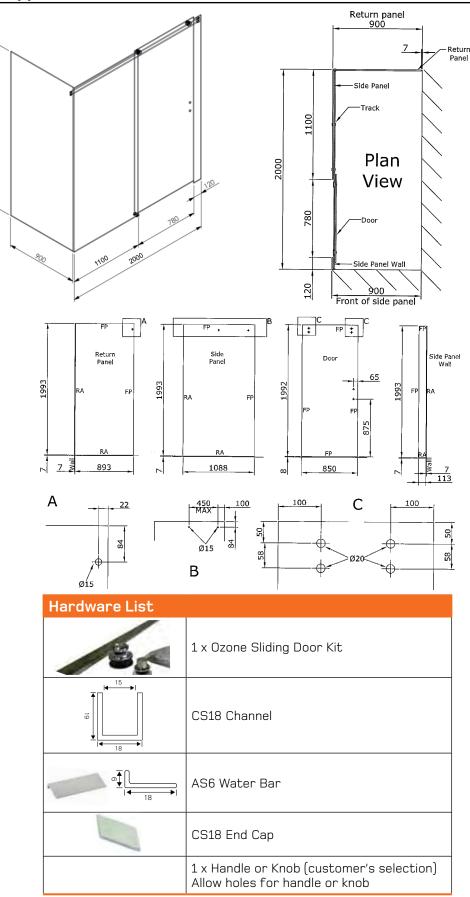


1 x Handle or Knob (customer's selection)

Allow holes for handle or knob

2000

Shower Type: Ozone Glass To Wall - 2 Side Panel



NOTE: Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel. Clear opening 695mm - subject to handle type. Max door weight 45kgs. Isometric shows a left hand door plan and glass drawings are for right hand door.

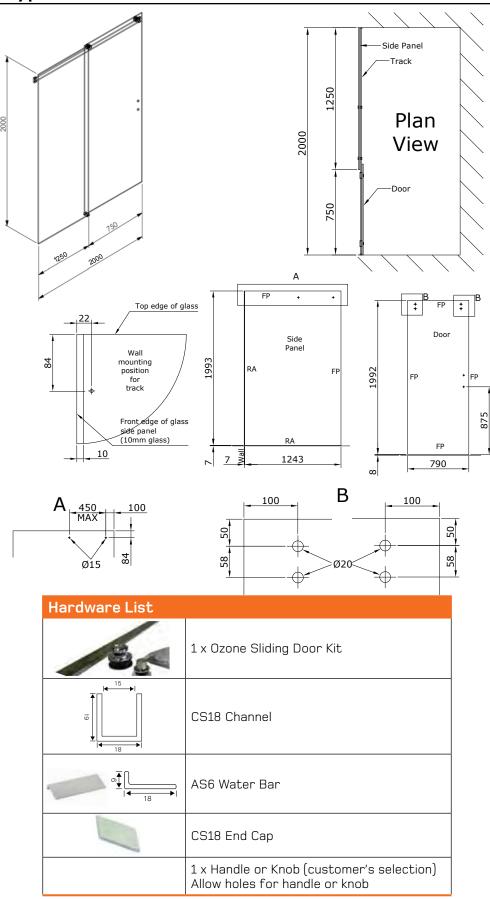


5

HARDWARE WARRANTY

Shower Type: Ozone Wall To Wall - 1 Side Panel



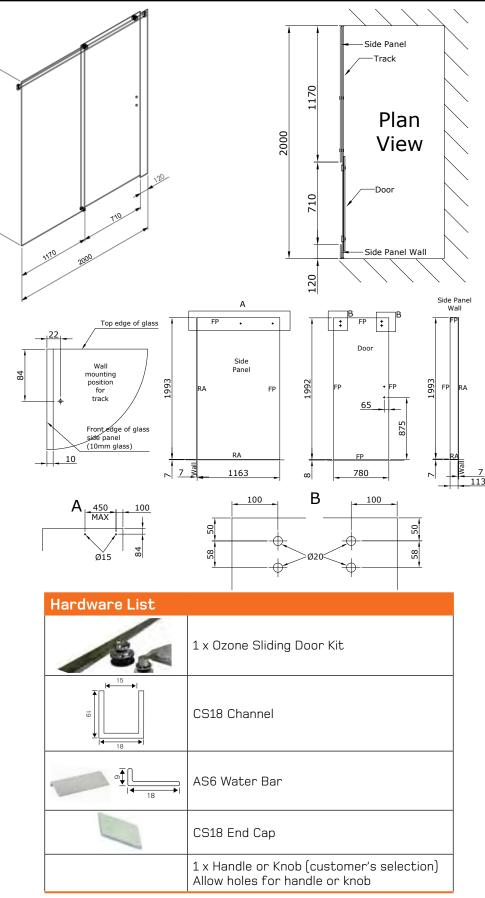


NOTE: Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel. Clear opening 665mm - subject to handle type. Max door weight 45kgs. Isometric shows a left hand door plan and glass drawings are for right hand door.



2000

Shower Type: Ozone Wall To Wall - 2 Side Panel



NOTE: Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel. Clear opening 625mm - subject to handle type. Max door weight 45kgs. Isometric shows a left hand door plan and glass drawings are for right hand door.

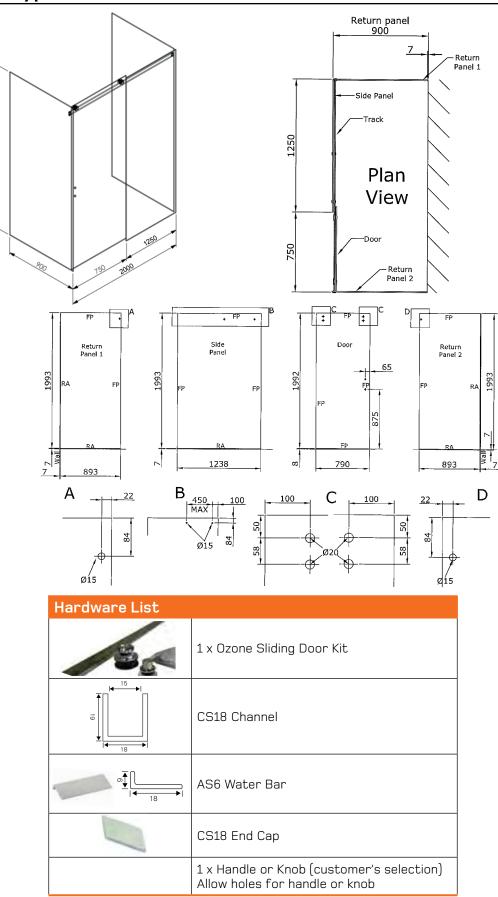


5

HARDWARE WARRANTY

Shower Type: Ozone Glass To Glass - 1 Side Panel



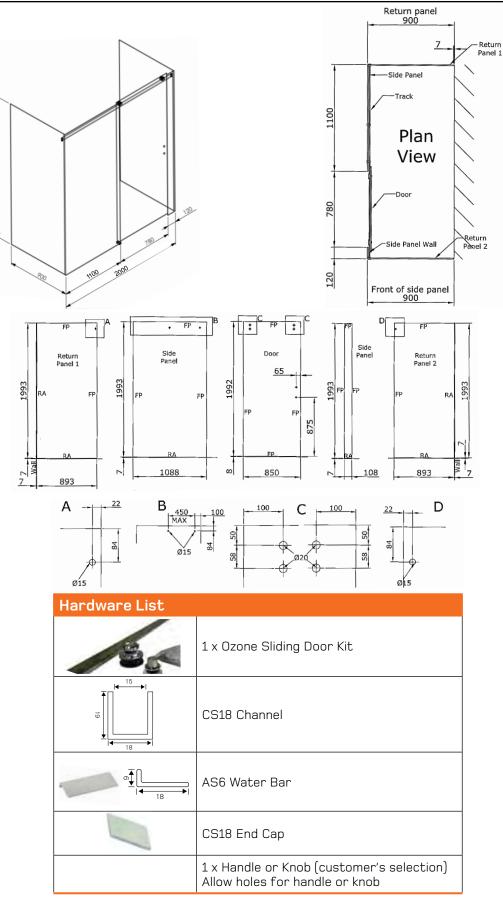


NOTE: Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel. Clear opening 665mm - subject to handle type. Max door weight 45kgs. Isometric shows a left hand door plan and glass drawings are for right hand door.

2000



Shower Type: Ozone Glass To Glass – 2 Side Panel



NOTE: Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel. Clear opening 695mm - subject to handle type. Max door weight 45kgs. Isometric shows a left hand door plan and glass drawings are for right hand door.



HARDWARE



Banio – Soft Close Sliding Shower Door (Top Hung)

Modern bathrooms are an oasis for well-being, a place of relaxation and recovery. And a statement of style that reflects the personal taste and sophistication of the homeowner.

Metro's Banio Soft Close sliding glass shower blends the functionality of our innovative sliding technology for minimalist clean lines to enhance any bathroom design.

There is a maximum door weight of 40 kg, so there are some limitations however; this easily covers the standard door width of around 600mm in most applications.



Key Features

- Maximum door weight: 40 kg or 1.6m2.
- Maximum door height: 2200 mm.
- To meet the multi configuration requirements of modern bathrooms, our Soft Close sliding shower has been specifically designed to allow you to design for wall-to-wall, wall-to-glass and glass-to glass applications.

The system is glazed with Metro Performance Glass, as follows:

- 8mm & 10mm TEMPAFLOAT® Toughened Safety Glass.
- Toughened Heat Soak Glass.
- Toughened Screen Print Glass.
- Toughened Digital Print Glass.
- Clearvision Glass for an ultraclear look.

Optional Extras

You can add glass shelves, sweeps or protect your shower with an EZClean Coating - designed to enable glass to have less contact with dirt, making your shower easy to clean and reducing limescale and grime.

EzyClean Technology

Applied in our state-of-the-art manufacturing facilities, Metro's unique EzyClean Technology provides a protective coating that creates a long lasting, invisible shield on your home's glass surfaces.

- Water will simply bead off the glass surface, resulting in cleaning time being significantly reduced. And it also makes cleaning simple, only requiring the use of water and a mild detergent with a microfibre cloth.
- Compared to ordinary glass, Metro EzyClean Technology:
 - resists staining from hard water deposits.
 - does not support the growth of bacteria.
 - eliminates the need for harsh and abrasive cleaning products.
 - protects against the build-up of soap scum, body oils, dirt, and grime.

Scope of Use

- Concealed soft close slide technology, clean profiles and finish options ensure that the system is easy to clean and maintain, whilst providing a level of elegance and modernity that will compliment any bathroom concept.
- For ease of installation and ventilation*, a space of 100-200mm from ceiling to soft close unit is recommended.
 *In conjunction with an extractor fan.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



FRAMELESS SHOWERS



Banio – Sliding Shower Door Standard Kits

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
BANIO SHOWER DOOR COMPLETE KIT EXCL: SOFT CLOSE 301912	301914	UP TO 1500mm GLASS THICKNESS: 8-10mm DOORS= Max 40Kgs EXTRUSION SIZE: 800x2200mm	ANOD ON REQUEST: POWDERCOAT	ALUM	SHOWER DOOR KIT FIXING: GLASS TO WALL GLASS TO GLASS* *Additional Wall Clips required depending on configuration.	SLIDING DOOR	Internal 8 External
BANIO SHOWER SOFT CLOSE	301912	SOFT CLOSE	SS	STAINLESS STEEL	SOFT CLOSING RUNNING GEAR	SLIDING DOOR COMPONENT	Internal & External
BANIO WALL CLIP BRACKET	301913	WALL CLIP	ANOD ON REQUEST: POWDERCOAT	ALUM	GLASS WALL MOUNTING CLIP	SLIDING DOOR COMPONENT	Internal & External

NOTE: Kit doesn't include soft close running gear which must be ordered separately. For Handles / Knobs (Refer to Hardware table section 7).

Notes for following page:

To complete the Banio door system, the following components may also be required dependant on application **ADDITIONAL: HANDLE OR KNOB SELECTION REQUIRED.** (Refer Handle selection table for additional options) **NOTE:** Allowance must be made in the glass panel for cut out holes (Handle or Knob)



FRAMELESS SHOWERS

Model

300279

300281

300301

300303 300302

300304 301851

300305

300307 300306

300308 301672

301674

301673

300478

300480 300479

300485

300486 301714

300287

300289

300288 300290 301849

300291 300293

300474

300475

300277

300278

300276

2500mm

2500mm

2500mm

EXTRUSION SIZE: 19 x15mm

Product

ANGLED WATER

BAR

18

CHANNEL CS18

15

18

CHANNEL CSR18 14.6 - 17

END CAP CC18

END CAP CC18 To SUIT 45 DEGREE MITRE CUT

CHANNEL CS15

11.50

15

END CAP CC15

ANGLE AS18

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19

12

Additional Components – Hardware List

Sizes mm

Finish

J	01203 11111	1 111311	Macchia	Type	Application	Aicu
	1400mm 1400mm	ANOD BRIGHT	ALUM	WATER BAR	FLOOR WATER SEAL*	Internal & External
	OVERALL SIZE: ON REQUEST:				*Aluminium Floor Mounted Water Bar.	
	18 x6mm	POWDERCOAT			5011	
	2100mm ANOD BRIGHT					
l	2100mm	ANOD NATURAL	ALUM	CHANNEL	CHANNEL SECTION	Internal & External
	2100mm	MILL FINISH				
I	2100mm	BLACK				
	2100mm	ARCTIC WHITE				
I	3000mm	ANOD BRIGHT				
I	3000mm	ANOD NATURAL				
I	3000mm	MILL FINISH				
l	3000mm	BLACK				
I	3000mm	ARCTIC WHITE				
I	GLASS	ON REQUEST:				
	THICKNESS: 12mm	POWDERCOAT				
	3000mm	PC	ALUM	CHANNEL	CHANNEL	Internal &
I	3000mm	ANOD NATURAL	,	STRATEL	SECTION	External
	GLASS	ON REQUEST:				
	THICKNESS: 12 & 15mm	POWDERCOAT				1
	OVERALL SIZE:					
	18 x 25mm					
	18x18x1mm	ANOD BRIGHT	ALUM	END CAP	END CAP	Internal &
	18x18x1mmANOD NATURAL18x18x1mmMILL FINISH				COMPONENT	External
					SUITS: CS18 CHANNEL	
	18x18x1mm	ANOD BRIGHT				•
1		ANOD NATURAL	ALUM	END CAP	END CAP COMPONENT	Internal & External
					SUITS:	N
	18x18x1mm PC				CS18 CHANNEL	
	2100mm	2100mm ANOD BRIGHT		CHANNEL	CHANNEL	Internal &
	2100mm	ANOD NATURAL			SECTION	External
	2100mm	MILL FINISH				
ļ	2100mm	BLACK				
	2100mm	ARCTIC WHITE				
	3000mm	ANOD BRIGHT				
	3000mm ANOD NATURAL					
	3000mm	MILL FINISH				
	3000mm	BLACK				
	3000mm	ARCTIC WHITE				
ļ	3000mm	BLACK				
	GLASS THICKNESS: 8mm	ON REQUEST: POWDERCOAT				
	15x18x1mm	ANOD BRIGHT	ALUM	END CAP	END CAP	Internal &
	15x18x1mm	ANOD NATURAL			COMPONENT SUITS:	External
					CS15 CHANNEL	
1					1	

Material

5

HARDWARE WARRANTY

Area

Application

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ANOD BRIGHT

ANOD NATURAL

MILL FINISH

ALUM

ANGLE



Internal &

External

V.

ANGLE

SECTION



Hinged Shower Doors

A fashionable, premium look in today's high spec homes. Our showers are custom made to suit your bathroom layout. Whether it requires hinged or sliding, angled panels or notch cut-outs, we deliver the best solution. Shower hardware can be matched to your other bathroom fittings and/or decor.





Key Features

- Elite Hinges (Suit 8-10mm Glass)
- Designer Hinges (Suit 8mm Glass)
- Commercial Indicator Locks Commercial Privacy Lockable Glass showers
- Commercial Hinge 10-12mm (please see Laguna/Malibu Gate Hinge section 7 page 493).

The system is glazed with Metro Performance Glass, as follows:

- ▶ 8mm & 10mm TEMPAFLOAT® Toughened Safety Glass.
- Toughened Heat Soak Glass.
- ▶ Toughened Screen Print Glass.
- Toughened Digital Print Glass.
- Glass for an ultraclear look.

Optional Extras

You can add glass shelves, sweeps or protect your shower with an EZClean Coating - designed to enable glass to have less contact with dirt, making your shower easy to clean and reducing limescale and grime.

EzyClean Technology

Applied in our state-of-the-art manufacturing facilities, Metro's unique EzyClean Technology provides a protective coating that creates a long lasting, invisible shield on your home's glass surfaces.

- Water will simply bead off the glass surface, resulting in cleaning time being significantly reduced. And it also makes cleaning simple, only requiring the use of water and a mild detergent with a microfibre cloth.
- Compared to ordinary glass, Metro EzyClean Technology:
 - resists staining from hard water deposits.
 - does not support the growth of bacteria.
 - eliminates the need for harsh and abrasive cleaning products.
 - protects against the build-up of soap scum, body oils, dirt, and grime.

Scope of Use

- Shower Door Hinges are suitable for use with 8-12mm thick glass.
- A number of shower configurations are possible.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



FRAMELESS SHOWERS



Maui – Basic Shower Door Kit

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MAUI SHOWER	500705	DIY KIT	ANOD BRIGHT	ALUM / BRASS	MAUI KITSET	SHOWER	Internal &
КІТ	500706	DIY KIT	ANOD BRIGHT	*Standard	SCREEN	External	
	500703	MERCHANT	ANOD BRIGHT		Kit includes,		
		GLASS THICKNESS: 10mm			Channel, End Caps, Overpanel Clamps, Pull Handle, Hinges, Water Seal. DIY KIT INCLUDES: Silicone Setting Blocks Packers		



Hinged – Shower Doors

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MF1 DOOR HINGE	300811	55x90x51mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
	300812	55x90x51mm	SC				8 Internal
1-4	300810	55x90x51mm	BLACK		PLATE		
	300812 55x90x51mm SC STAIDARD MOUNTING PLATE STAIDARD MOUNTING PLATE INFO DOIN 300812 55x90x51mm BLACK STAIDARD MOUNTING PLATE STAIDARD MOUNTING FIXING: WALL FIX 300805 55x90x51mm BLACKC ON REQUEST: THICKNESS: B-10mm DOR REQUEST: PWDERCOAT BRASS DOOR HINGE SINGLE SIDED MOUNTING PLATE FIXING: WALL FIX 300806 55x90x51mm PC BRASS DOOR HINGE SINGLE SIDED MOUNTING PLATE FIVOT DOOR 300808 55x90x51mm PC BRASS DOOR HINGE SINGLE SIDED MOUNTING PLATE FIVOT DOOR 300809 55x90x51mm SC BN REQUEST: THICKNESS: B-10mm DON REQUEST: POWDERCOAT BBRASS DOOR HINGE SINGLE SIDED MOUNTING PLATE FIVOT DOOR 300804 55x90x35mm SC BRASS DOOR HINGE SINGLE SIDED MOUNTING PLATE PIVOT DOOR 300804 55x90x35mm SC BRASS DOOR HINGE SINGLE SIDED MOUNTING PLATE PIVOT DOOR 300804 55x90x35mm SC BRASS DOOR HINGE GLASS TO GLASS PIVOT DOOR 300813 10mm PC						
		THICKNESS:			WALL FIX		
MF1-L DOOR	300807	55x90x37mm	SC	BRASS		PIVOT DOOR	Bathroom
HINGE	300806	55x90x37mm	PC				8 Internal
L		THICKNESS:			FIXING:		Ш
MF1-L3 DOOR	300808	55x90x51mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300809	55x90x51mm	SC				& Internal
E		THICKNESS:			PLATE FIXING:		Ш
MF1-XL DOOR	300813	55x90x62mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300814	55x90x62mm	SC				8 Internal
L		THICKNESS:			PLATE FIXING:		Ŵ
MF1-90 DOOR	300803	55x90x35mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300804	55x90x35mm	SC				8 Internal
		THICKNESS:			PLATE FIXING:		D
MF2 DOOR HINGE	300823	10mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
	301908	8mm	PC				& Internal
	300825	10mm	SC		GLASS		
							l fr
	300819	10mm	BLACKC				
MF2-90 DOOR	300817	55x90x35mm	PC	BBASS			Bathroom
HINGE			SC	217.00	90 DEGREE		8 Internal
Ľ		THICKNESS:			FIXING: GLASS TO		D
MF2-BF DOOR	300820	110 x 90mm	PC	BRASS		PIVOT DOOR	Bathroom
HINGE	300821	110 x 90mm	SC				8 Internal
		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		FIXING: GLASS TO GLASS		Ш

5

HARDWARE WARRANTY







Hinged – Shower Doors

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MF2-135 DOOR	300815	110 x 90mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300816	110 x 90mm	SC		135 DEGREE ANGLE		8 Internal
	301815	110 x 90mm	BLACK		FIXING: GLASS TO GLASS		D
		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT			E PIVOT DOOR	
MF2-SP DOOR	301967	110 x 90mm	PC OR SC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE (SPECIAL CUSTOM)		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		CUSTOM ANGLES (FROM 125 – 180 DEGREES)		8 Internal
					FIXING: GLASS TO GLASS		



Designer Hinges

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MF2DL	300826	140 x 48mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
DESIGNER DOOR HINGE		GLASS THICKNESS: 8mm	ON REQUEST: POWDERCOAT		GLASS TO GLASS FIXING: GLASS TO GLASS (LEFT HUNG)		8 Internal
MF2DR	300827	140 x 48mm	PC OR SC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
DESIGNER DOOR HINGE		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		GLASS TO GLASS FIXING: GLASS TO GLASS (RIGHT HUNG)		8 Internal



HARDWARE WARBANTY

Additional Components – Hardware List



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ANGLED WATER	300279	1400mm	ANOD BRIGHT	ALUM 6063	WATER BAR	FLOOR WATER	Internal &
BAR	300281	1400mm	ANOD NATURAL			SEAL*	External
		OVERALL SIZE:	ON REQUEST:			*Aluminium Floor Mounted Water	
		18 x6mm	POWDERCOAT			Bar.	
HALF ROUND	300335	1400mm	ANOD BRIGHT	ALUM 6063	WATER BAR	FLOOR WATER	Internal &
WATER BAR	300337	1400mm	ANOD NATURAL			SEAL* *Aluminium Floor	External
		OVERALL SIZE: 13 x5mm	ON REQUEST: POWDERCOAT			Mounted Water Bar.	
Ī						Dai.	•
I 4 13 →							
WATER	300343	1400mm	ANOD BRIGHT	ALUM 6063	FELT WATER	WATER	Internal &
DEFLECTOR	300345	1400mm	ANOD NATURAL		DEFLECTOR	DEFLECTOR* *Aluminium	External
		OVERALL SIZE: 13 x5mm	ON REQUEST: POWDERCOAT			Mounted Water Deflector.	
₹ ſ\						Dencetor	
							Ψ ^Δ
−							
CHANNEL CS18	300301	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
	300303	2100mm	ANOD NATURAL			SECTION	External
15	300302	2100mm	MILL FINISH				
	300304	2100mm	BLACK				1.,
<u> </u>	301851	2100mm	ARCTIC WHITE				
19	300305	3000mm	ANOD BRIGHT				
	300307	3000mm	ANOD NATURAL				
18	300306	3000mm 3000mm	MILL FINISH BLACK				
	300308 301672	3000mm	ARCTIC WHITE				
	301072	GLASS	ON REQUEST:				
		THICKNESS:	POWDERCOAT				
		12mm					
CHANNEL CSR18	301674	3000mm	PC	ALUM 6063	CHANNEL	CHANNEL	Internal &
0.000 million 102	301673	3000mm	ANOD NATURAL			SECTION	External
17 - 146 - 17		GLASS THICKNESS:	ON REQUEST: POWDERCOAT				
•		12 8 15mm	1 ONDERIOOM				•
23.1		OVERALL SIZE: 18 x 25mm					
•							
END CAP CC18	300478	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
END CAP CUIS	300480	18x18x1mm	ANOD NATURAL			COMPONENT	External &
	300479	18x18x1mm	MILL FINISH			SUITS:	
						CS18 CHANNEL	1
END CAP CC18	300485	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
To SUIT 45 DEGREE	300486	18x18x1mm	ANOD NATURAL	ALOW 0000		COMPONENT	External
MITRE CUT	301714	18x18x1mm	PC			SUITS:	
						CS18 CHANNEL	1 '`
/							
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Additional Components – Hardware List

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
CHANNEL CS15	300287	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
	300289	2100mm	ANOD NATURAL			SECTION	External
◀ 11.50	300288	2100mm	MILL FINISH				
	300290	2100mm	BLACK				
	301849	2100mm	ARCTIC WHITE				
	300291	3000mm	ANOD BRIGHT				
	300293	3000mm	ANOD NATURAL				
	300292	3000mm	MILL FINISH				
15	300294	3000mm	BLACK				
	301668	3000mm	ARCTIC WHITE				
	301850	3000mm	BLACK				
		GLASS THICKNESS: 8mm	ON REQUEST: POWDERCOAT				
END CAP CC15	300474	15x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
	300475	15x18x1mm	ANOD NATURAL			COMPONENT SUITS: CS15 CHANNEL	External
ANGLE AS18	300277	2500mm	ANOD BRIGHT	ALUM 6063	ANGLE	ANGLE	Internal &
I ∓∩	300278	2500mm	ANOD NATURAL			SECTION	External
	300276	2500mm	MILL FINISH				

HINGE GLASS CUT OUT

(Refer to Hinge Cut Out details for Hinge Glass Preparation) NOTE: Allowance must be made in the glass panel for cut out holes

ADDITIONAL: HANDLE OR KNOB SELECTION REQUIRED

(Refer Handle selection table for additional options) NOTE: Allowance must be made in the glass panel for cut out holes (Handle or Knob) 5

HARDWARE WARRANTY

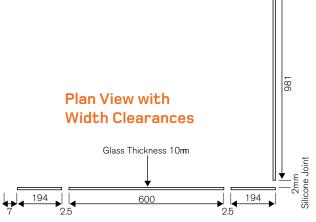




Shower Type: Glass to Glass Square







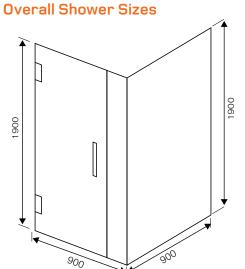
Elevation with Height Clearances

Hardware List	
L	2 x MF2 Hinges
	5.5m x CS18 Channel
	1 x 600mm WD1 Water Deflector
	2 x CC Channel End Caps
	1 x Pair Handles (customer's selection)

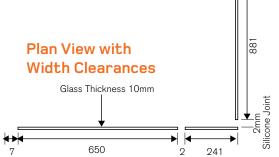
NOTE: If a water bar is to be used under the door, allow an additional 5mm clearance under door.



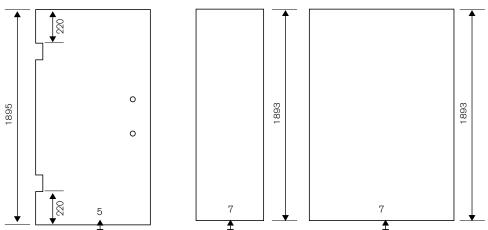
Shower Type: Wall Hung Square



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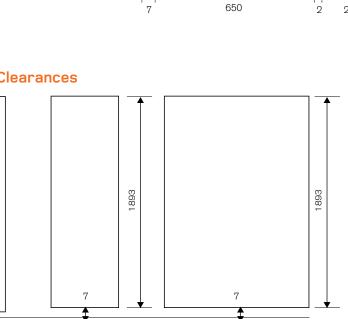


Elevation with Height Clearances



Hardware List							
	2 x MF1 Hinges						
	3m x CS18 Channel						
	1 x 650mm WD1 Water Deflector						
	1 x CC Channel End Cap						
	1 x Pair Handles (customer's selection)						

NOTE: If a water bar is to be used under the door, allow an additional 5mm clearance under door.



5

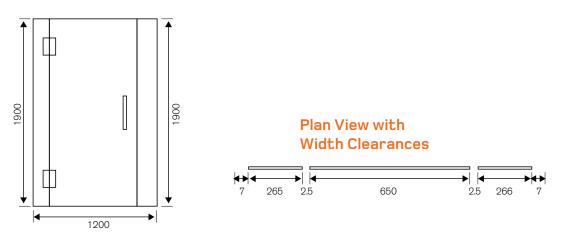
HARDWARE WARRANTY



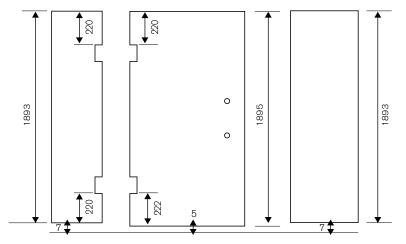
SHOWER SET UP EXAMPLES Shower Type: Glass to Glass Inline



Overall Shower Sizes



Elevation with Height Clearances



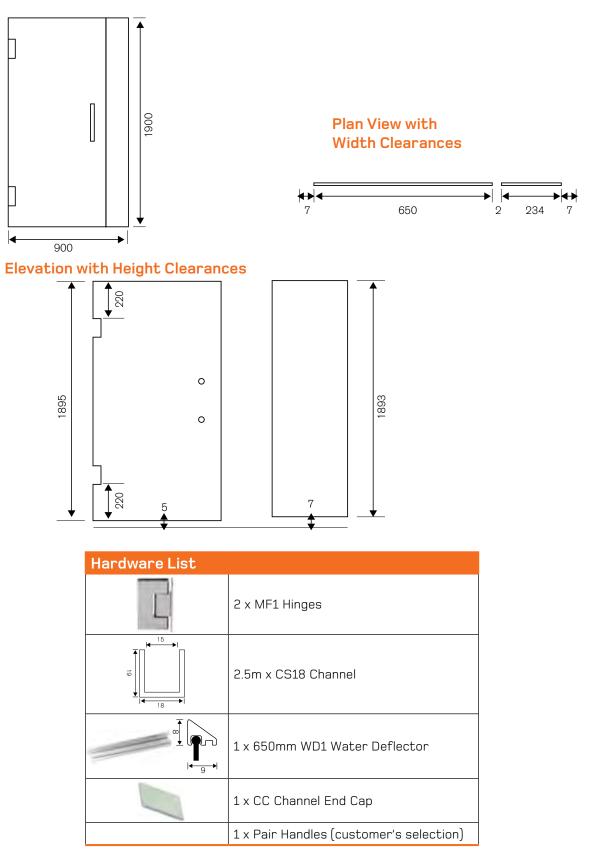
Hardware List							
L	2 x MF2 Hinges						
	4.5m x CS18 Channel						
	1 x 650mm WD1 Water Deflector						
	2 x CC Channel End Caps						
	1 x Pair Handles (customer's selection)						

NOTE: If a water bar is to be used under the door, allow an additional 5mm clearance under door.



Shower Type: Wall Hung Inline

Overall Shower Sizes



NOTE: If a water bar is to be used under the door, allow an additional 5mm clearance under door.

5

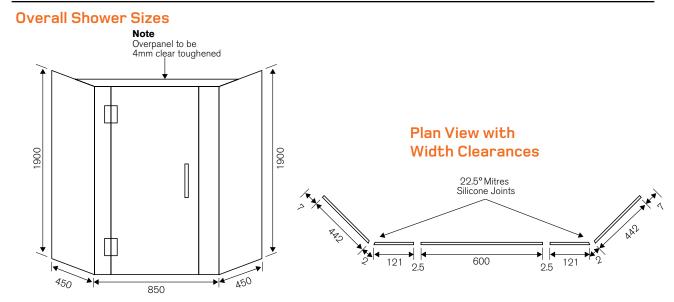
IARDWARE VARRANTY

©Metro Performance Glass. Manufactured Frameless Glass Specifiers Guide. Edition 6, Version 1/2019. www.metroglass.co.nz Frameless Showers

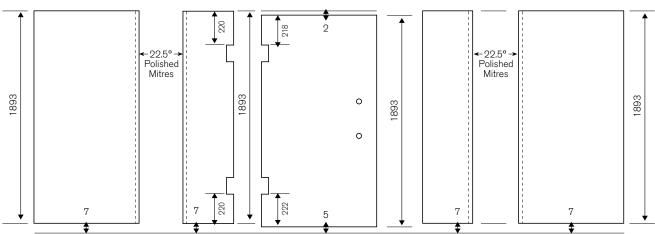


Shower Type: Glass to Glass Quadrant





Elevation with Height Clearances

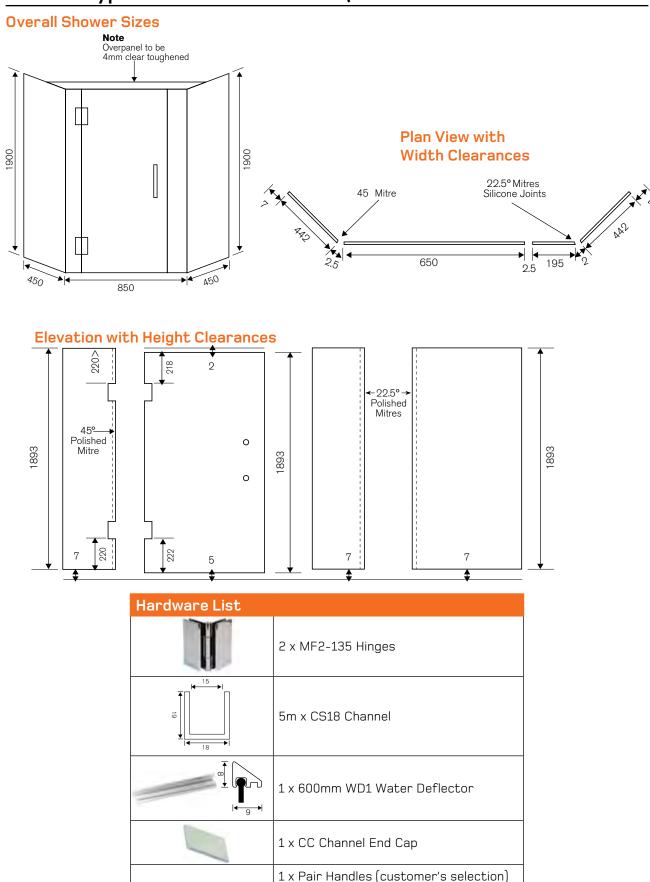


Hardware List	
L	2 x MF2 Hinges
	5m x CS18 Channel
	1 x 600mm WD1 Water Deflector
	2 x CC Channel End Caps
	1 x Pair Handles (customer's selection)

NOTE: If a water bar is to be used under the door, allow an additional 5mm clearance under door.



Shower Type: 135° Glass to Glass Quadrant



NOTE: If a water bar is to be used under the door, allow an additional 5mm clearance under door.





5

HARDWARE WARRANTY



Walk-In/Glass Shower Screens

A fashionable, premium look in today's high spec homes. Our showers are custom made to suit your bathroom layout. Whether it requires hinged or sliding, angled panels or notch cut-outs, we deliver the best solution. Shower hardware can be matched to your other bathroom fittings and/or decor.

NOTE: For showers and bath screens that do not have a door there is a need to have the whole bathroom floor as a wet area. This is a requirement if the edge of the screen is less than 1500mm from the shower rose. (Ref NZ Building Code E3). Grading to a floor waste and terminate with a water stop.

5



Key Features

- Channel Designs
 - CS18 19 x 18mm Channel Aluminium Extrusion
 - CS15 18 x 15mm Channel Aluminium Extrusion
 - AS18 19 x 15mm Angled Extrusion
- End Caps
 - To suit CS18, CS17 & CS15
 - CS18 45 Degree Mitre
- Channels are available in bright and natural silver anodised, matt black powdercoat standard finishes.
- Special colours Powder coated on request

The system is glazed with Metro Performance Glass, as follows:

- 8mm & 10mm TEMPAFLOAT® Toughened Safety Glass.
- Toughened Heat Soak Glass.
- Toughened Screen Print Glass.
- Toughened Digital Print Glass.
- Clearvision Glass for an ultraclear look.

Optional Extras

You can add glass shelves, sweeps or protect your shower with an EZClean Coating - designed to enable glass to have less contact with dirt, making your shower easy to clean and reducing limescale and grime.

EzyClean Technology

- Applied in our state-of-the-art manufacturing facilities, Metro's unique EzyClean Technology provides a protective coating that creates a long lasting, invisible shield on your home's glass surfaces.
- Water will simply bead off the glass surface, resulting in cleaning time being significantly reduced. And it also makes cleaning simple, only requiring the use of water and a mild detergent with a microfibre cloth.
- Compared to ordinary glass, Metro EzyClean Technology:
 - resists staining from hard water deposits.
 - does not support the growth of bacteria.
 - eliminates the need for harsh and abrasive cleaning products.
 - protects against the build-up of soap scum, body oils, dirt, and grime.

Scope of Use

> A number of shower configurations are possible.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz





Walk-In Showers Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
CHANNEL	300301	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
CS18	300303	2100mm	ANOD NATURAL			SECTION	External
15 ⊨	300302	2100mm	MILL FINISH				
	300304	2100mm	BLACK				
19	301851	2100mm	ARCTIC WHITE				
	300305	3000mm	ANOD BRIGHT				
	300307	3000mm	ANOD NATURAL				
18	300306	3000mm	MILL FINISH				
	300308	3000mm	BLACK				
	301672	3000mm GLASS	ARCTIC WHITE				
		THICKNESS: 12 & 15mm	ON REQUEST: POWDERCOAT				
CHANNEL CSR18	301674	3000mm	PC	ALUM 6063	CHANNEL	CHANNEL	Internal &
17 - 148 - 1- 17	301673	3000mm	ANOD NATURAL			SECTION	External
6 ES		GLASS THICKNESS: 12 & 15mm	ON REQUEST: POWDERCOAT				
		OVERALL SIZE: 18 x 25mm					
END CAP	300478	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
CC18	300480	18x18x1mm	ANOD NATURAL	ALUM 6065	ENDCAP	COMPONENT	External
	300479	18x18x1mm	MILL FINISH			SUITS:	
						CS18 CHANNEL	
END CAP CC18	300485	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
To SUIT 45 DEGREE MITRE CUT	300486	18x18x1mm	ANOD NATURAL			COMPONENT	External
	301714	18x18x1mm	PC			SUITS: CS18 CHANNEL	
							-
CHANNEL	300287	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
CS15	300289	2100mm	ANOD NATURAL			SECTION	External
11 50	300288	2100mm	MILL FINISH				
	300290	2100mm	BLACK				•
	301849	2100mm	ARCTIC WHITE				
	300291	3000mm	ANOD BRIGHT				
∞	300293	3000mm	ANOD NATURAL				
	300292	3000mm	MILL FINISH				
₩ 15	300294	3000mm	BLACK				
	301668	3000mm	ARCTIC WHITE				
	301850	3000mm GLASS	BLACK ON REQUEST:				
		THICKNESS: 8mm	POWDERCOAT				
END CAP CC15	300474	15x18x1mm	ANOD BRIGHT				Internal C
	300475	15x18x1mm	ANOD NATURAL	ALUM 6063	END CAP	END CAP COMPONENT	Internal & External
						SUITS: CS15 CHANNEL	
ANGLE AS18	300277	2500mm	ANOD BRIGHT	ALUM 6063	ANGLE	ANGLE	Internal &
↑	300278	2500mm	ANOD NATURAL			SECTION	External
19	300276	2500mm	MILL FINISH				
18							



Walk-In Showers Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ANGLED WATER	300279	1400mm	ANOD BRIGHT	ALUM 6063	WATER BAR	FLOOR WATER	Internal &
BAR	300281	1400mm	ANOD NATURAL			SEAL*	External
		EXTRUSION SIZE: 18 x6mm	ON REQUEST: POWDERCOAT			*Aluminium Floor Mounted Water Bar.	K
HALF ROUND	300335	1400mm	ANOD BRIGHT	ALUM 6063	WATER BAR	FLOOR WATER	Internal &
WATER BAR	300337	1400mm	ANOD NATURAL			SEAL*	External
		EXTRUSION SIZE: 13 X 5mm	ON REQUEST: POWDERCOAT			*Aluminium Floor Mounted Water Bar.	

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HARDWARE WARRANTY





Glass Shelves Components (Corner Shelf-Low Iron or Clear Glass)



Glass Shelves

A 10mm toughened glass corner shelf is a practical addition to your shower and complements the frameless look with its minimal glass profile. A useful holdall for shampoos and soap it also assists as a brace for the shower screen. Available in either 200mm or 250mm radius, and 200mm radius with a soap dish recess.

- Glass Corner Shelves.
- Low Iron or Clear glass types available.

Product	Model	Sizes mm	Glass	Туре	Туре	Application	Area
CORNER SHELF (SOAP DISH)	301361	200 x 200 x 10mm	LOW IRON (T	OUGHENED)	GLASS SHELF	CORNER SHOWER	Internal & External
	301364	250 x 250 x 10mm	LOW IRON (T	OUGHENED)		SHELF	X
		GLASS THICKNESS: 10mm					
CORNER SHELF - (CLEAR)	301359	200 x 200 x 10mm	CLEAR (TO	JGHENED)	GLASS SHELF	CORNER SHOWER	
	301362	250 x 250 x 10mm	CLEAR (TO	JGHENED)		SHELF	
		GLASS THICKNESS: 10mm					
CORNER SHELF -(LOW IRON)	301360	200 x 200 x 10mm	LOW IRON (T	OUGHENED)	GLASS SHELF	CORNER SHOWER	
(301363	250 x 250 x 10mm	LOW IRON (T	OUGHENED)	-	SHELF	
		GLASS THICKNESS: 10mm					
CORNER SHELF -(LOW IRON)	301365	200 x 200 x 10mm	CLEAR (TO	UGHENED)	GLASS SHELF	CORNER SHOWER	
	301366	250 x 250 x 10mm	CLEAR (TO	UGHENED)		SHELF	
		GLASS THICKNESS: 10mm					



Shower / Bath Seals (Clear PVC Rigid Water Seals)

10 HARDWARE WARRANTY

Shower / Bath Seals

PVC Shower and Bath Seals are available to suit all 10mm glass specified. They are a clear rigid / flexible PVC water seal to suit all applications and configurations.

- Clear PVC Rigid Water Seals (to suit 10mm Glass)
- Water Bars / Deflectors
 - Aluminium (Half Round or Angled) floor mounted Water Bar Channels
 - Aluminium Water Deflectors complete with Woolpile Felt

Product	Model	Sizes mm	Finish	Туре	Application	Area
CLEAR WATER SEAL	301337	2000mm	PVC CLEAR	PVC RIGID	WATER SEAL*	Internal &
Flexible PVC		GLASS THICKNESS: 10mm			*Rigid Back & Flexible seal.	External
CLEAR WATER SEAL	301338	2200mm	PVC CLEAR	PVC RIGID	WATER SEAL*	
		GLASS THICKNESS: 10mm			*Rigid Stop.	
CLEAR WATER SEAL	301340	2200mm	PVC CLEAR	PVC RIGID	WATER SEAL*	
5		GLASS THICKNESS: 10mm			*Rigid Channel & Flexible Fin.	
CLEAR WATER SEAL	301341	2200mm	PVC CLEAR	PVC RIGID	WATER SEAL*	
		GLASS THICKNESS: 10mm			*Rigid Channel & Flexible Seal.	
CLEAR WATER SEAL	301342	2200mm	PVC CLEAR	PVC RIGID	WATER SEAL*	
5 -		GLASS THICKNESS: 10mm			*Rigid Channel & Flexible Tube.	
CLEAR WATER SEAL	301339	2200mm	PVC CLEAR	PVC RIGID	WATER SEAL*	
		GLASS THICKNESS: 10mm			*Rigid Channel, Water Deflector & Dual Flexible Seals.	
CLEAR WATER SEAL	301343	2200mm	PVC CLEAR	PVC RIGID	WATER SEAL*	
		GLASS THICKNESS: 10mm			*Rigid Channel & Flexible Seal 90 Degrees.	
CLEAR WATER SEAL	301344	2200mm	PVC CLEAR	PVC RIGID	WATER SEAL*	
5		GLASS THICKNESS: 10mm			*Rigid Channel & Flexible Seal 135 Degrees.	





Water Bars / Deflectors

(Aluminium (Half Round or Angled) floor mounted Water Bar Channels complete with Woolpile Felt)

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Product	Model	Sizes mm	Finish	Туре	Application	Area
ANGLED WATER BAR	300279	1400mm	ANOD BRIGHT	WATER BAR	FLOOR WATER SEAL*	Internal & External
	300281	1400mm	ANOD NATURAL		*Aluminium Floor Mounted	
	301979	1400mm	BLACK		Water Bar.	
1	301665	2800mm	ANOD BRIGHT			
	301980	2800mm	ANOD NATURAL			
	301663	2800mm	BLACK			
		EXTRUSION SIZE: 18 x 6mm	ON REQUEST: POWDERCOAT			
HALF ROUND	300335	1400mm	ANOD BRIGHT	WATER BAR	FLOOR WATER SEAL*	Internal &
WATER BAR	300337	1400mm	ANOD NATURAL			External
	301629	1400mm	BLACK		*Aluminium Floor Mounted Water Bar.	
	300338	2800mm	ANOD BRIGHT			
	300340	2800mm	ANOD NATURAL			
	301630	2800mm	BLACK			
		EXTRUSION SIZE: 13 x 5mm	ON REQUEST: POWDERCOAT			
WATER DEFLECTOR	500444	1400mm	ANOD BRIGHT	FELT WATER	FLOOR WATER SEAL*	Internal &
	500445	1400mm	ANOD NATURAL	DEFLECTOR		External
	500447	1400mm	BLACK		*Aluminium Mounted Water Deflector.	
	500439	2800mm	ANOD BRIGHT			
	500440	2800mm	ANOD NATURAL			
$\overline{\mathbf{T}}$ \mathbf{O}	500442	2800mm	BLACK			
		EXTRUSION SIZE: 8 x 9mm	ON REQUEST: POWDERCOAT			↓ IJ
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Support Brackets (Headers to support glass panels)

Stainless Shower Braces are designed to replace the need for a glass overpanel to support the glass panels. They can be cut-tosize on site and will brace the shower during installation, making it possible to complete the install within the one visit. Available in Polished or Satin Chrome Stainless or Powdercoat finish in either round or flat bars with round or square clamp options and square corner brackets. Custom Sizes up to 1200mm in length are possible.

- ▶ Wall to Side Panel (25mm diameter Rod)
- Side Panel to Return (16 x 16mm Square Section)
- Inline Side Panel to Side Panel (16 x 16mm Square Section)
- Quadrant Support Header (16 x 16mm Square Section)
- > Adjustable support headers are also available upon request

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
SUPPORT	300749	Up to 1200mm	PC	BRASS	SHOWER	SHOWER	Internal &	
HEADER (GLASS PANEL TO WALL)	300750	Up to 1200mm	SC		SUPPORT HEADER	OVERPANEL SUPPORT	External	
25MM DIA. TUBE		25mm dia. Rod	ON REQUEST:			SECTION		
		GLASS THICKNESS: Upon product selection	POWDERCOAT		Glass Panel to Wall			
SUPPORT	300745	Up to 1200mm	PC	BRASS	SHOWER	SHOWER		
HEADER (GLASS QUADRANT)	300746	Up to 1200mm	SC		SUPPORT HEADER	OVERPANEL SUPPORT		
16 X16MM		16x16 sq	ON REQUEST:		SECTION			
TYPE 3		GLASS THICKNESS:	POWDERCOAT					
nominated size		Upon product selection						
SUPPORT	300743	Up to 1200mm	PC	BRASS	SHOWER	SHOWER OVERPANEL SUPPORT		
HEADER (GLASS SIDE PANEL TO	300744	Upto1200mm	SC		SUPPORT HEADER		OVERPANEL SUPPORT	
RETURN)		16x16 sq	ON REQUEST:			SECTION		
16 X16MM		GLASS	POWDERCOAT					
		THICKNESS: Upon product						
		selection						
	300747	Up to 1200mm	PC	BRASS	SHOWER	SHOWER		
HEADER (GLASS INLINE SIDE	300748	Up to 1200mm	SC		SUPPORT HEADER	OVERPANEL SUPPORT		
PANEL TO SIDE PANEL)		16x16 sq	ON REQUEST: POWDERCOAT			SECTION		
16 X16MM TYPE 4		GLASS THICKNESS: Upon product	OWDERCOAL					
nominated size		selection						

NOTE: Ordered on request only (please specify dimensions) – Required nominated opening plus glass thickness. ***SEE SHOWER PANEL OVER CLAMP SECTION FOR OTHER OPTIONS.**







Overpanel and glass clamps are available to suit different configurations, including shelve Brackets. Upstands, and panel overclamps.

- Upstand Support Bracket (50mm and 100mm in height) Custom sizes available upon request
 - Polished Chrome or Satin Chrome finish
 - 50mm diameter base
- Shelf Brackets 6mm, 8mm, 10mm and 12mm (Half Round & Square Design)
 - Fixing to glass by grub screw
- Shower Overpanel clamp Round 20mm diameter
 - Polished Chrome finish
 - 10mm shower to 6mm glass over panel
 - Fixed to glass via a grub screw
- Shower Overpanel clamp Square 20 x 20mm
 - Polished Chrome or Matt Black finish
 - 10mm shower to 6mm glass over panel
 - Fixed to glass via a grub screw

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SHELF BRACKET	300135	6mm	PC	BRASS	SHELF BRACKET	HOLDS UP	Bathroom
– (HALF ROUND)	300136	6mm	SC			GLASS SHELF	
Rec	300137	8mm	PC				
	300138	8mm	SC				
1414	300126	10mm	PC				
	300127	10mm	SC				
	300133	12mm	PC				
	300134	12mm	SC				
		GLASS THICKNESS: 6-12mm	ON REQUEST: POWDERCOAT				Residential Commercial Internal Walls
SHELF BRACKET	300139	10mm	SC	BRASS	SHELF BRACKET	HOLDS UP	
- (SQUARE)		GLASS THICKNESS: 10mm	ON REQUEST: POWDERCOAT			GLASS SHELF	





50mm diameter base.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
UPSTAND	300146	50mm Height	PC	304	UPSTAND BRACKET	HOLDS GLASS	Bathroom
SUPPORT BRACKET	300147	50mm Height	SC	STAINLESS STEEL		UP OFF FLOOR	
	300144	100mm Height	PC				
	300145	100mm Height	SC			*10G Lag screws	
		GLASS THICKNESS: 8-10mm *Special Sizes are also available upon request. (Custom height / glass thickness requirements)	ON REQUEST: POWDERCOAT			are not included to fix support stand to substrate.	

Shower Panel Over Clamp

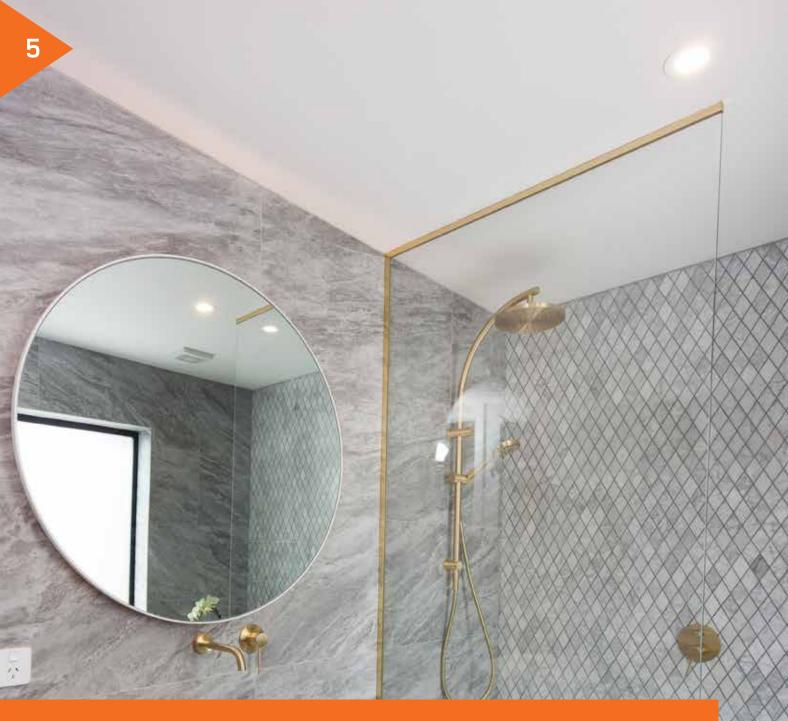
To secure a 6mm glass overpanel to the top of a shower.

*SEE FRAMELESS SHOWER SUPPORT BRACKETS FOR OTHER OPTIONS.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ROUND SHOWER	300351	20mm dia.	PC	304	OVERPANEL	SHOWER	Bathroom
		GLASS THICKNESS: 10mm shower to 6mm glass over panel	ON REQUEST: POWDERCOAT	STAINLESS STEEL	CLAMP	OVERPANEL CLAMP	
SQUARE SHOWER	300352	20 x 20mm	PC	304	OVERPANEL	SHOWER OVERPANEL CLAMP	Bathroom
OVERPANEL CLAMP	300353	20 x 20mm	BLACK	STAINLESS STEEL	CLAMP		
		GLASS THICKNESS: 10mm shower to 6mm glass over panel	ON REQUEST: POWDERCOAT	STEEL			





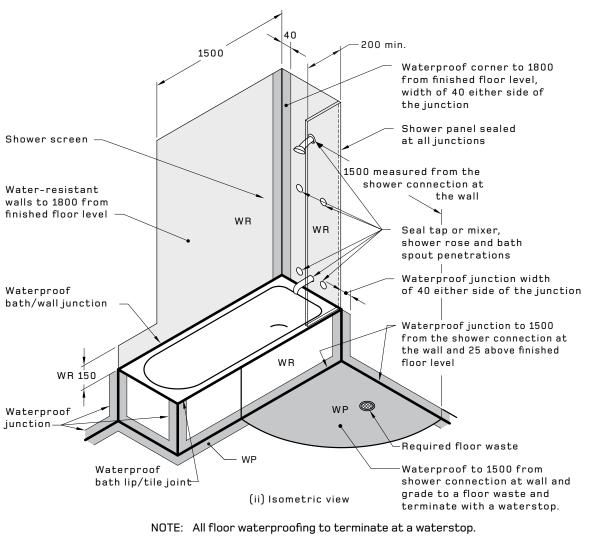


Glass Bath Screens

A fashionable, premium look in today's high spec homes. Our Bath screens are custom made to suit your bathroom layout. Whether it requires hinged or sliding, angled panels or notch cut-outs, we deliver the best solution. Bath screens hardware can be matched to your other bathroom fittings and/or decor.

NOTE: For showers and bath screens that do not have a door there is a need to have the whole bathroom floor as a wet area. This is a requirement if the edge of the screen is less than 1500mm from the shower rose. (Ref New Zealand Building Code E3). Grading to a floor waste and terminate with a water stop.

5



NOTE: All floor waterproofing to terminate at a waterstop. (b) Shower panel less than 900 mm DIMENSIONS IN MILLIMETRES

Key Features

- Choice of folding, swing or fixed panel bath screens.
- Channel Designs.
- ▶ End Caps.
- Channels are available in bright and natural silver anodised, matt black powdercoat as standard finishes.
- Special colours Powder coated on request.
- Custom made to fit the bathroom space.

Optional Extras

- You can add glass shelves, or protect your bath screen with an EZClean Coating - designed to enable glass to have less contact with dirt, making your shower easy to clean and reducing limescale and grime.
- Options for a hinged panel door. The hinged bath screen provides a combination of splash guard and door. Hinged off a glass panel, it folds back on itself enabling easy access to taps.

EzyClean Technology

Applied in our state-of-the-art manufacturing facilities, Metro's unique EzyClean Technology provides a protective coating that creates a long lasting, invisible shield on your home's glass surfaces.

- Water will simply bead off the glass surface, resulting in cleaning time being significantly reduced. And it also makes cleaning simple, only requiring the use of water and a mild detergent with a microfibre cloth.
- Compared to ordinary glass, Metro EzyClean Technology:
 - resists staining from hard water deposits.
 - does not support the growth of bacteria.
 - eliminates the need for harsh and abrasive cleaning products.
 - protects against the build-up of soap scum, body oils, dirt, and grime.

Scope of Use

Glass bath screens are an alternative to a shower curtain for this situation. A glass screen is not only more attractive looking and durable, but most importantly they offer protection from water damage by containing water inside the bath. They are also easily cleaned, making them far more hygienic than a scruffy shower curtain.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz.





Maui – Basic Bath Screen Kit

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MAUI BATH SCREEN KIT	500707 500704	DIY KIT MERCHANT GLASS THICKNESS: 10mm	ANOD BRIGHT	ALUM / BRASS	MAUI KITSET *Standard Kit includes, Channel, End Caps, Hinges. DIY KIT INCLUDES: Silicone	BATH SCREEN	Internal & External
					Setting Blocks Packers		



Designer Hinges

Product	Model	Sizes mm	Finish	Grade	Туре	Application	Area
MF2DL DESIGNER DOOR HINGE	300826	140 x 48mm GLASS THICKNESS: 8mm	PC ON REQUEST: POWDERCOAT	BRASS	DOOR HINGE GLASS TO GLASS FIXING: GLASS TO GLASS (LEFT HUNG)	PIVOT DOOR	Bathroom 8 Internal
MF2DR DESIGNER DOOR HINGE	300827	140 x 48mm GLASS THICKNESS: 8-10mm	PC OR SC ON REQUEST: POWDERCOAT	BRASS	DOOR HINGE GLASS TO GLASS FIXING: GLASS TO GLASS (RIGHT HUNG)	PIVOT DOOR	Bathroom & Internal



Bath Screens

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
CHANNEL	300301	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
CS18	300303	2100mm	ANOD NATURAL			SECTION	External
¹⁵	300302	2100mm	MILL FINISH				
	300304	2100mm	BLACK				1.,
19	301851	2100mm	ARCTIC WHITE				
	300305	3000mm	ANOD BRIGHT				
	300307	3000mm	ANOD NATURAL				
18	300306	3000mm	MILL FINISH				
	300308	3000mm	BLACK				
	301672	3000mm	ARCTIC WHITE				
		GLASS THICKNESS: 12 & 15mm	ON REQUEST: POWDERCOAT				
CHANNEL CSR18	301674	3000mm	PC	ALUM 6063	CHANNEL	CHANNEL	Internal &
17 - 146 17	301673	3000mm	ANOD NATURAL			SECTION	External
1985		GLASS THICKNESS: 12 & 15mm OVERALLSIZE:	ON REQUEST: POWDERCOAT				P
		18 x 25mm					
END CAP CC18	300478	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
	300480	18x18x1mm	ANOD NATURAL			COMPONENT	External
	300479	18x18x1mm	MILL FINISH			SUITS: CS18 CHANNEL	
	300485	18x18x1mm	ANOD BRIGHT				•
END CAP CC18 To SUIT 45 DEGREE	300485	18x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP COMPONENT	Internal & External
MITRE CUT	301714	18x18x1mm	PC			SUITS:	
	501/14	10/10/1001				CS18 CHANNEL	1
CHANNEL CS15	300287	2100mm	ANOD BRIGHT	ALUM 6063	CHANNEL	CHANNEL	Internal &
11.50	300289	2100mm	ANOD NATURAL			SECTION	External
◀11.50	300288	2100mm	MILL FINISH				
	300290	2100mm	BLACK				
	301849	2100mm	ARCTIC WHITE				
100 I	300291	3000mm	ANOD BRIGHT				
	300293	3000mm	ANOD NATURAL				
± 15	300292	3000mm	MILL FINISH				
	300294	3000mm	BLACK				
	301668	3000mm	ARCTIC WHITE				
	301850	3000mm GLASS	BLACK ON REQUEST:				
		THICKNESS: 8mm	POWDERCOAT				
END CAP CC15	300474	15x18x1mm	ANOD BRIGHT	ALUM 6063	END CAP	END CAP	Internal &
	300475	15x18x1mm	ANOD NATURAL			COMPONENT	External
						SUITS: CS15 CHANNEL	
ANGLE AS18	300277	2500mm	ANOD BRIGHT	ALUM 6063	ANGLE	ANGLE	Internal &
₹∩	300278	2500mm	ANOD NATURAL			SECTION	External
19	300276	2500mm	MILL FINISH				
							1,
		•					

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HARDWARE WARRANTY

For Handles / Knobs (Refer to Hardware table section 7).

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Hinged – Shower/Bath Screens

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MF1 DOOR HINGE	300811	55x90x51mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
	300812	55x90x51mm	SC		STANDARD MOUNTING		8 Internal
1-4	300810	55x90x51mm	BLACK		PLATE		
	300805	55x90x51mm	BLACKC		FIXING:		
		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		WALL FIX		
MF1-L DOOR	300807	55x90x37mm	SC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300806	55x90x37mm	PC		SINGLE SIDED MOUNTING		8 Internal
L		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		PLATE FIXING: WALL FIX		Ш
MF1-L3 DOOR	300808	55x90x51mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300809	55x90x51mm	SC		SINGLE SIDED MOUNTING		8 Internal
L		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		FIXING: WALL FIX		D
MF1-XL DOOR	300813	55x90x62mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300814	55x90x62mm	SC		SINGLE SIDED MOUNTING		& Internal
		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		PLATE FIXING: WALL FIX		Ш
MF1-90 DOOR	300803	55x90x35mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300804	55x90x35mm	SC		90 DEGREE MOUNTING		& Internal
J_r		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		FIXING: WALL FIX		Ш
MF2 DOOR HINGE	300823	10mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
	301908	8mm	PC		GLASS TO		& Internal
	300825	10mm	SC		GLASS		
	300822	10mm	BLACK		FIXING:		Y
	300819	10mm	BLACKC		GLASS TO GLASS		
MF2-90 DOOR	300817	55x90x35mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300818	55x90x35mm	SC		90 DEGREE		& Internal
đ		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT	1	ANGLE FIXING: GLASS TO GLASS		D
MF2-BF DOOR	300820	110 x 90mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE	300821	110 x 90mm	SC		180 DEGREE ANGLE		8 Internal
		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		FIXING: GLASS TO GLASS		Ũ

Clear PVC Rigid Water Seals

PVC Shower and Bath Seals are available to suit all 10mm glass specified.

They are a clear rigid / flexible PVC water seal to suit all applications and configurations. (Refer to specific Shower and Bath Seals Section page 448)



Hinged – Shower/Bath Screens

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MF2-135 DOOR	300815	110 x 90mm	PC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom & Internal
HINGE	300816	110 x 90mm	SC		135 DEGREE ANGLE		
	301815	110 x 90mm	BLACK		FIXING: GLASS TO GLASS		
		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT				4-
MF2-SP DOOR	301967	110 x 90mm	PC OR SC	BRASS	DOOR HINGE	PIVOT DOOR	Bathroom
HINGE (SPECIAL CUSTOM)		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		CUSTOM ANGLES (FROM 125 – 180 DEGREES) FIXING: GLASS TO		8 Internal
100					GLASS		



FRAMELESS SHOWERS



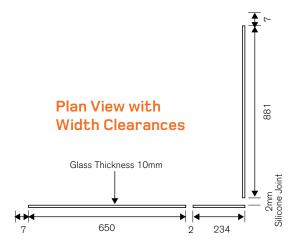


HARDWARE WARRANTY

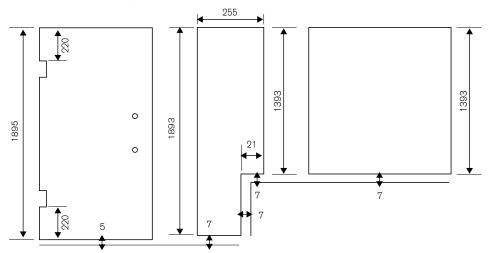
Shower Type: Wall Hung Square Stepped for Bath







Elevation with Height Clearances



Hardware List	
Ľ	2 x MF1 Hinges
	3.5m x CS18 Channel
	1 x 650mm WD1 Water Deflector
	1 x CC Channel End Cap
	1 x Pair Handles (customer's selection)

NOTE: If a water bar is to be used under the door, allow an additional 5mm clearance under door.











Hardware Options

A complete range of locks, locking systems and architectural hardware is available to suit all residential and commercial applications.







Hardware Options

PRODUCT OVERVIEW	466
 HARDWARE OPTIONS Pull Handles – Residential Pull Handles – Commercial Pull Knobs Button Heads – Components Finger Pulls 	468 468 470 472 473 473
 Indicator Locks Lever Lock & Latch Set Heavy Duty Sliding Door Lock Pool Gate Latches Digital Lock Set Yale SmartTouch – Digital Locking System 	474 475 476 476 478 479



AREA ICONS KEY:









SLIDING

SLIDING SHOWERS

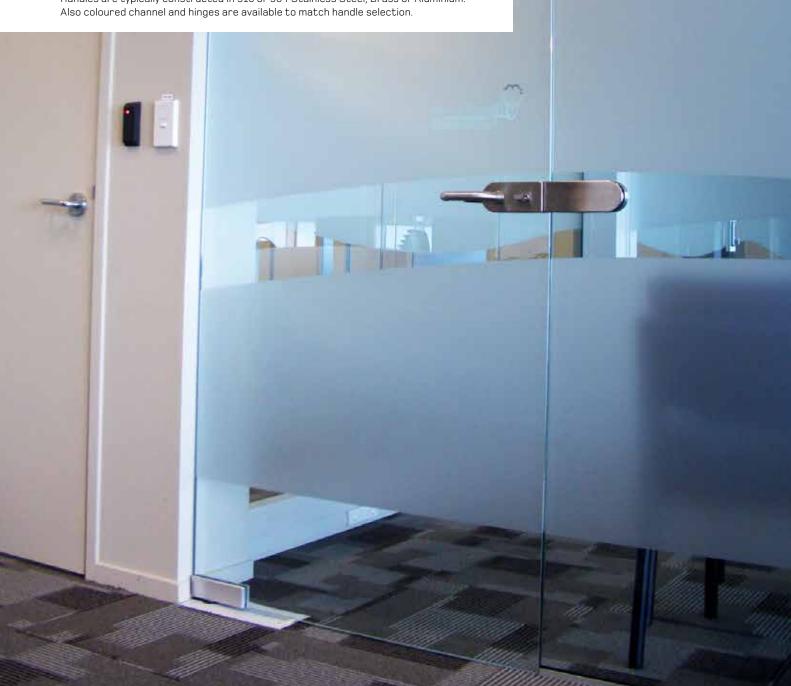
TOILET DOORS DOORS

PRODUCT OVERVIEW

6

Hardware Options – Handles / Latch Sets / Lever Locks

Choosing the right handles and locks can make all the difference – not only for the look of your shower or residential/commercial door, but also in terms of its functionality and security. There are a number of other colours and finishes available upon request. Handles are typically constructed in 316 or 304 Stainless Steel, Brass or Aluminium. Also coloured channel and hinges are available to match handle selection.



6

Hardware Options

► KNOB

- Square
- Round
- PULL HANDLE (Hollow or Solid)
 - Commercial
 - Residential
- ▶ INDICATOR LOCK
 - Pivot
- ▶ LEVER LOCK & LATCH SET
 - Light Duty
 - Heavy Duty
- DIGITAL LOCK SET
 - Electronic Solution
- DEADLOCK
 - Commercial Sliding Door
- FINGER PULLS
 - Sliding Door
 - Glass Cutouts (Recommended for hinged doors only)
- PATCH LOCKS
 - Bottom
 - Centre
 - Cover Plate
 - Cylinder

Finish Glossary:

- ALUMINIUM
- ▶ BRASS
- ▶ 304 STAINLESS STEEL
- ▶ 316 STAINLESS STEEL
 - ANOD Anodisied Aluminium (Film Thickness varies in microns, typically available in a black, bronze, and silver/ natural)
 - **AB** Antique Brass
 - ALUM Aluminium
 - **BB** Bright Brass
 - **BZ** Bronze
 - BLACK* Black
 - BLACKC Black Chrome
 - **CP** Chrome Plate
 - **FB** Florentine Bronze
 - NP Nickel Plate
 - MILL FINISH Aluminium / Steel
 - **PB** Polished Brass
 - **PC** Polished Chrome
 - **POWDERCOAT** Powdercoat Finish (Film Thickness varies in microns and colour types vary)
 - **PSS** Polished Stainless Steel
 - SC Satin Chrome
 - SCP Satin Chrome Plate
 - SNP Satin Nickel Plate
 - **SS** Stainless Steel
 - SSS Satin Stainless Steel

 $\mbox{*Could}$ be Matt Black Powdercoat. Contact MFG to check the finish and colour.

*Not all Finishes are offered as standard. Custom finishes are possible and are subject to confirmation from MFG where not explicitly stated. Please inquire directly via MFG customer Service on phone: (09) 927 3000 or email mfg@metroglass.co.nz.



HARDWARE OPTIONS





Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ROUND D 250MM	300632	275 25mm	BLACK	304 STAINLESS	PULL HANDLE	SLIDING DOOR	Bathroom
	300633	275 25mm	PSS	STEEL		PIVOT DOOR	
	300634	275 25mm	SSS				
		GLASS THICKNESS: 6-15mm Hole Centres 250mm (Hole dia. 12mm)	ON REQUEST: POWDERCOAT				Internal o External
DELTA D	300676	275x50x25mm	PSS	304 STAINLESS	PULL HANDLE	SLIDING DOOR	Bathroom
	300677	275x50x25mm	SSS	STEEL		PIVOT DOOR	
		GLASS THICKNESS: 6-15mm Hole Centres 250mm (Hole dia.12mm)	ON REQUEST: POWDERCOAT				Internal & External
SQUARE D	300647	270mm x (10 x 20mm Rectangular	BLACK	304 STAINLESS STEEL	PULL HANDLE	SLIDING DOOR PIVOT DOOR	Bathroom
	300648		PSS				
	300649	section)	SSS				
		GLASS THICKNESS: 6-15mm Hole Centres 250mm (Hole dia. 10mm)	ON REQUEST: POWDERCOAT				Internal & External
SQUARE WIDE D	300650	270mm x (20 x 40mm	PSS	304 STAINLESS F STEEL	PULL HANDLE	SLIDING DOOR PIVOT DOOR	Bathroom
	300651	Rectangular section)	SSS				
		GLASS THICKNESS: 6-15mm Hole Centres 250mm (Hole dia. 10mm)	ON REQUEST: POWDERCOAT				Internal & External
H SQUARE L	300635	250 x 19mm	PSS	304 STAINLESS	PULL HANDLE	SLIDING DOOR PIVOT DOOR	Bathroom
	300636	250 x 19mm	SSS	STEEL			
		GLASS THICKNESS: 6-15mm Hole Centres 150mm (Hole dia.10mm)	ON REQUEST: POWDERCOAT				Internal o External
	300638	350x 25mm	BLACK	304 STAINLESS STEEL	PULL HANDLE	SLIDING DOOR	Bathroom
	300639	350x 25mm	PSS			PIVOT DOOR	
	300640	350x 25mm	SSS				
	300637	350x 25mm	BLACKC				Internal & External
5		GLASS THICKNESS: 6-15mm Hole Centres 250mm (Hole dia. 10mm)	ON REQUEST: BLACKC POWDERCOAT				\square

Standard Fixing Back to Back. Sold in Pairs. Options available for Single with Buttons or Pull Knob.

NOTE: All pull handles can be modified to accommodate a thicker glass specification. Please indicate glass thickness at time of order.



Pull Handles – Residential

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
H ROUND S	300641	250mm x (19 x 19mm	PSS	304 STAINLESS STEEL	PULL HANDLE	SLIDING DOOR PIVOT DOOR	Bathroom
and a second	300642	Square Section)	SSS				
		GLASS THICKNESS: 6-15mm Hole Centres 150mm (Hole dia. 10mm)	ON REQUEST: POWDERCOAT				Internal & External
H SQUARE S	300644	350mm x (19 x	BLACK	304 STAINLESS	PULL HANDLE	SLIDING DOOR	Bathroom
	300645	19mm Square	PSS	STEEL		PIVOT DOOR	
	300646	Section)	SSS				* *
		GLASS THICKNESS: 6-15mm	ON REQUEST: BLACKC POWDERCOAT				Internal & External
-		Hole Centres 250mm (Hole dia. 10mm)					U
MS250-500	300696	250mm	PSS	304 STAINLESS	SINGLE D PULL	SLIDING DOOR	Bathroom
RANGE	300698	300mm	PSS	STEEL	HANDLE ONE SIDE WITH	PIVOT DOOR	
ROUND D WITH PULL KNOB	300700	400mm	PSS		TUBE KNOB OTHER SIDE	*D Handle can be mounted	•
	300702	450mm	PSS		(MK25)	horizontally on	Internal & External
	300704	500mm	PSS		1xMK25	outer shower door glass panel	
	300697	250mm	SSS		300879 = PSS	to act as a towel rail.	
	300699	300mm	SSS		300880 = SSS		
	300701	400mm	SSS		*Includes Button.		
	300703	450mm	SSS		Button.		
0	300705	500mm	SSS				
		GLASS THICKNESS: 6-15mm Hole Centres (Hole dia. 12mm)	ON REQUEST: POWDERCOAT				
M250-500	300665	250mm	PC	304 STAINLESS	ROUND D PULL	SLIDING DOOR	Bathroom
RANGE	300667	300mm	PSS	STEEL	HANDLE	PIVOT DOOR	
ROUND D PULL HANDLE	300669	400mm	PC		1x25mm Button & Rod	*D Handle can be mounted	•
R	300671	450mm	PC		300230 = PSS	horizontally on outer shower	Internal & External
	301829	500mm	PSS		300231 = SSS	door glass panel	
	300666	250mm	SC		*Includes	to act as a towel rail.	
	300668	300mm	SSS		Button.		
	300670	400mm	SSS				
	300672	450mm	SSS				
	300673	500mm	SSS				
		GLASS THICKNESS: 6-15mm	ON REQUEST: BLACKC POWDERCOAT				
		Hole Centres (Hole dia. 12mm)					

 ${\it Standard}\ {\it Fixing}\ {\it Back}\ to\ {\it Back}.\ {\it Sold}\ in\ {\it Pairs}.\ {\it Options}\ available\ for\ {\it Single}\ with\ {\it Buttons}\ or\ {\it Pull}\ {\it Knob}.$

NOTE: All pull handles can be modified to accommodate a thicker glass specification. Please indicate glass thickness at time of order.



ARBANTY



Pull Handles – Commercial

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SQUARE D 475MM	300712	475 x (25mm Square Section)	SSS	304 STAINLESS STEEL	COMMERCIAL PULL HANDLE	SLIDING DOOR PIVOT DOOR	Internal & External
		GLASS THICKNESS: 6 - 15mm Hole Centres 450mm (Hole dia. 12mm)	ON REQUEST: POWDERCOAT				U
SQUARE D 600MM	300713	600 x (25mm Square Section)	SSS	304 STAINLESS STEEL	COMMERCIAL PULL HANDLE	SLIDING DOOR PIVOT DOOR	Internal & External
		GLASS THICKNESS: 6 - 15mm Hole Centres 600mm (Hole dia. 12mm)	ON REQUEST: POWDERCOAT				U
SQUARE WIDE D 475MM	300706	475 x (50x 25mm Rectangular Section)	SSS	304 STAINLESS STEEL	COMMERCIAL PULL HANDLE	SLIDING DOOR PIVOT DOOR	Internal & External
U		GLASS THICKNESS: 6 - 15mm Hole Centres 450mm (Hole dia. 12mm)	ON REQUEST: POWDERCOAT				
SQUARE WIDE D 625MM	300708	625 x (50 x 25mm	SSS	304 STAINLESS STEEL	COMMERCIAL PULL HANDLE	SLIDING DOOR PIVOT DOOR	Internal & External
025MM	300707	Rectangular Section)	PSS	SIEEL	POLLHANDLE	PIVOT DOOR	
		GLASS THICKNESS: 6 - 15mm Hole Centres 600mm (Hole dia. 12mm)	ON REQUEST: POWDERCOAT				
ROUND D	300679	300 x 32mm	SSS	304 STAINLESS	COMMERCIAL	SLIDING DOOR	Internal &
300MM	300678	300 x 32mm	PSS	STEEL	PULL HANDLE	PIVOT DOOR	External
O		GLASS THICKNESS: 6 - 15mm Hole Centres 300mm (Hole dia. 14mm)	ON REQUEST: POWDERCOAT				D
ROUND D	300681	500 x 32mm	SSS	304 STAINLESS	COMMERCIAL	SLIDING DOOR	Internal &
500MM	300680	500 x 32mm	PSS	STEEL	PULL HANDLE	PIVOT DOOR	External
U		GLASS THICKNESS: 6-15mm Hole Centres 500mm (Hole dia. 14mm)	ON REQUEST: POWDERCOAT				
ROUND D 600MM	300682	600 x 32mm	SSS	304 STAINLESS	COMMERCIAL	SLIDING DOOR	Internal &
OUTIVIN	300683	600 x 32mm	PSS	STEEL	PULL HANDLE	PIVOT DOOR	External
U		GLASS THICKNESS: 6 - 15mm Hole Centres 600mm (Hole dia. 14mm)	ON REQUEST: POWDERCOAT				

Standard Fixing Back to Back. Sold in Pairs. Options available for Single with Buttons or Pull Knob.

NOTE: All pull handles can be modified to accommodate a thicker glass specification. Please indicate glass thickness at time of order.





Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
H ROUND XL	300687	600 x 25mm	SSS	304 STAINLESS	COMMERCIAL	SLIDING DOOR	Internal &
600MM	300686	600 x 25mm	PSS	STEEL	PULL HANDLE	PIVOT DOOR	External
•		GLASS THICKNESS: 6 - 15mm Hole Centres 400mm (Hole dia. 14mm)	ON REQUEST: POWDERCOAT				\square
H ROUND XXL	300689	900 x 25mm	SSS	304 STAINLESS	COMMERCIAL	SLIDING DOOR	Internal &
900MM	300688	900 x 25mm	PSS	STEEL	PULL HANDLE	PIVOT DOOR	External
		GLASS THICKNESS: 6 - 15mm Hole Centres 700mm (Hole dia.14mm)	ON REQUEST: POWDERCOAT				D
SQUARELINE	300710	600mm x (25mm Square Section)	SSS	304 STAINLESS STEEL	COMMERCIAL PULL HANDLE	SLIDING DOOR PIVOT DOOR	Internal & External
-		GLASS THICKNESS: 6 - 15mm Hole Centres 425mm (Hole dia. 12mm)	ON REQUEST: POWDERCOAT				U
ICON ROUND	501141	750 x 25mm	SSS	316 STAINLESS	COMMERCIAL	SLIDING DOOR	Internal &
750MM		GLASS THICKNESS: 6 - 15mm Hole Centres 500mm (Hole dia.14mm)		STEEL	PULL HANDLE	PIVOT DOOR	
ICON ROUND	501142	1250 x 25mm	SSS	316 STAINLESS	COMMERCIAL	SLIDING DOOR	Internal &
1250MM		GLASS THICKNESS: 6 - 15mm Three Holes at 500mm Centres (Hole dia. 14mm)		STEEL	PULL HANDLE	PIVOT DOOR	External
ICON ROUND	501143	1750 x 25mm	SSS	316 STAINLESS	COMMERCIAL	SLIDING DOOR	Internal &
1750MM		GLASS THICKNESS: 6 - 15mm Four Holes at 500mm Centres (Hole dia. 14mm)		STEEL	PULL HANDLE	PIVOT DOOR	External

Standard Fixing Back to Back. Sold in Pairs. Options available for Single with Buttons or Pull Knob.

NOTE: All pull handles can be modified to accommodate a thicker glass specification. Please indicate glass thickness at time of order.



6

ARRANTY



Pull Knobs



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SQUARE KNOB	300885	25 x 25mm	PC	PLATED BRASS	PULL KNOB	PIVOT DOOR	Bathroom
	300886	25 x 25mm	SC		I OLL KNOD		
11 11 110	301952	25 x 25mm	BLACK				
		GLASS THICKNESS: 6-15mm	ON REQUEST: POWDERCOAT				
TUBE KNOB	300879	25mm dia.	PSS	PLATED BRASS	PULL KNOB	PIVOT DOOR	Bathroom
	300880	25mm dia.	SSS				
and the second		GLASS THICKNESS: 6-15mm	ON REQUEST: POWDERCOAT				1
BUTTON KNOB	300881	38mm dia.	PSS	PLATED BRASS	PULL KNOB	PIVOT DOOR	Bathroom
-	300882	38mm dia.	SSS				
()		GLASS THICKNESS: 6-15mm	ON REQUEST: POWDERCOAT				
BEVEL KNOB	300883	38mm dia.	PSS	PLATED BRASS	PULL KNOB	PIVOT DOOR	Bathroom
	300884	38mm dia.	SSS				
III adiii		GLASS THICKNESS: 6-15mm	ON REQUEST: POWDERCOAT				1
SQUARE KNOB	300693		PC	PLATED BRASS	PULL KNOB	PIVOT DOOR	Bathroom
	300694	32mm Fixing	SC				
F	300692	Hole Centres	BLACK				
		GLASS THICKNESS: 6-15mm 70mm x (50mm width x 24mm depth)	ON REQUEST: POWDERCOAT				
HIGHLIGHT	301617	30mm dia.	PC	PLATED BRASS	PULL KNOB	PIVOT DOOR	Bathroom
WASHER *Available in 30,	301618	37mm dia.	PC		HANDLE		
37 and 43mm	301619	43mm dia.	PC		COMPONENT	SUITS COMPONENT	1
Diameters			ON REQUEST: POWDERCOAT			30mm Diameter 300879 300880 300883 300884	
						37mm Diameter 300879 300880 300883 300884	
						43mm Diameter 300881 300882	

Standard Fixing Back to Back. Sold in Pairs. Options available for Single with Buttons or Pull Handle.





Button Heads – Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
BUTTON HEADS	300230	25mm	PSS	316 STAINLESS	HANDLE	SLIDING DOOR	Bathroom
25 8 32MM	300231	25mm	SSS	STEEL	CONVERSION		
DIAMETER	300232	32mm	PSS				
	300233	32mm	SSS				Internal & External

For conversion of double to single pull handles.



Finger Pulls

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
FINGER PULL	500606	10mm	SSS	316 STAINLESS	FINGER PULL	SLIDING DOOR	Bathroom
RAISED	500607	12mm	SSS	STEEL	HANDLE		
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				Internal & External
FINGER PULL	300516	10mm	SSS	316 STAINLESS	FINGER PULL	SLIDING DOOR	Bathroom
FLUSH	302159	12mm	SSS	STEEL	HANDLE		
-		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				Internal & External

(Glass Cutouts are also available – For Pivot Doors not recommended for Sliding Door Applications).



Indicator Locks For Pivot Doors (Privacy / Locking options)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
INDICATOR LOCK	300940	90x55mm	PC	PLATED BRASS	INDICATOR	PIVOT DOOR	Bathroom
(DOOR TO WALL)	300941	90x55mm	SC		LOCK		
() () () ()		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT				Internal 8 Commercial
INDICATOR LOCK	300947	90x110mm	PC	PLATED BRASS	INDICATOR	PIVOT DOOR	Bathroom
(DOOR TO SIDEPANEL)		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT		LOCK		Internal & Commercial
INDICATOR LOCK	300931	50x69mm	PC	PLATED BRASS	INDICATOR	PIVOT DOOR	Bathroom
(DOOR TO WALL) No Glass Cutout	300932	50x69mm	SC		LOCK		
Required.		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT				Internal & Commercial
INDICATOR LOCK	300935	100x69mm	PSS	PLATED BRASS	INDICATOR	PIVOT DOOR	Bathroom
(DOOR TO SIDEPANEL)	300936	100x69mm	SSS		LOCK		
No Glass Cutout Required.		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT				Internal & Commercial
HEAVY DUTY	300939	90x55mm	SC	PLATED BRASS	INDICATOR	PIVOT DOOR	Bathroom
INDICATOR LOCK (DOOR TO WALL)	300942	90x55mm	PC	_	LOCK		
000		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT				Internal & Commercial
HEAVY DUTY	300949	90x55mm	PC	PLATED BRASS	INDICATOR	PIVOT DOOR	Bathroom
INDICATOR LOCK (DOOR TO	300946	90x55mm	PC		LOCK		
SIDEPANEL)		GLASS THICKNESS: 8-10mm	ON REQUEST: POWDERCOAT				Internal o Commercial



Lever Lock & Latch Set For Pivot Doors (Exterior Lockset / Interior Lever)



					_		
Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
LEVER LOCK (TIMBER /	500592	175x65mm	PSS	316 STAINLESS STEEL	LEVER LOCKSET*	PIVOT DOOR	Internal & External
ALUMINIUM JAMB)	500593	175x65mm	SSS	01222			Commercial
JAMBJ	301486	175x65mm	PSS		*Locking to Timber or		Locking
	301487	70x28mm	PSS		Aluminium		
	301488	70x28mm	SSS		Jamb		
For Timber		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
LEVER LOCK	500594	175x65mm	PSS	316 STAINLESS	LEVER	PIVOT DOOR	Internal &
(GLASS SIDELIGHT)	500595	175x65mm	SSS	STEEL	LOCKSET*		External Commercial
	301486	175x65mm	PSS		*Locking to		Locking
	301489	175x65mm	SSS		Timber or Aluminium		
For Glass		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		Jamb		
LEVER LATCHSET	500596	172x63mm	PSS	316 STAINLESS	LEVER	PIVOT DOOR	Internal &
(TIMBER / ALUMINIUM	500597	172x63mm	SSS	STEEL	LATCHSET*		External
JAMB)	301486	172x63mm	PSS		*Latching		Commercial Locking
-	301487	70x28mm	PSS		to Timber or Aluminium		
- •	301488	70x28mm	SSS		Jamb		
For		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		Jamb		
LEVER LATCHSET	500598	172x63mm	PSS	316 STAINLESS	LEVER	PIVOT DOOR	Internal &
(GLASS SIDELIGHT)	500599	172x63mm	SSS	STEEL	LATCHSET*		External
	301486	172x63mm	PSS		*Latching to		Commercial Locking
	301489	172x63mm	SSS		Glass Sidelight		
For Glass		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
HEAVY DUTY LEVER LOCK	500600	227x50mm Right hand	PC	316 STAINLESS STEEL	INDICATOR LOCK	PIVOT DOOR	Internal & External
P	500601	227x50mm Left hand	PC		*Locking		Commercial Locking
M I	300956	198x30mm	PSS		options include cylinder/turn		
	301743	227x50mm	SSS		301487 301488		
0	301744	227x50mm	PSS		and cylinder		-
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		Lock Body = 225 x 50 x 37mm GLASS THICKNESS: 10-12mm OVERALL LENGTH = 225mm	ON REQUEST: POWDERCOAT		to cylinder 300426		

6

©Metro Performance Glass. Manufactured Frameless Glass Specifiers Guide. Edition 6, Version 1/2019. www.metroglass.co.nz Hardware Options





Heavy Duty Sliding Door Lock For Sliding Doors (Exterior / Interior Lockset)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
HEAVY DUTY SLIDING DOOR	500604	COMPLETE KIT PATCH & KEEPER	SATIN SILVER	316 STAINLESS STEEL	SLIDING DOOR DEADLOCK	SLIDING DOOR	Internal 8 External
LOCK	300953	226x50mm*	SATIN SILVER				Commercial Locking
	300954	198x30mm**	SATIN SILVER				
. 1		GLASS THICKNESS: 10-12mm					U
		*Strike Patch **Keeper					

Pool Gate Latches For Pivot Doors / Gates (Exterior Lockset)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
POOL GATE	300918	105x100mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH (GLASS TO GLASS)	300919	105x100mm	SSS	STEEL	LATCH*		Pool Fence
	300917	105x100mm	ANOD NATURAL		*180 degree		
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		(Glass to Glass)		
POOL GATE	300912	97x50mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH (GLASS TO POST)	300913	97x50mm	SSS	STEEL	LATCH*		Pool Fence
	300911	97x50mm	ANOD NATURAL		*Glass to Post		
: -		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
POOL GATE	300915	85x100mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH (GLASS TO WALL	300916	85x100mm	SSS	STEEL	STEEL LATCH*		Pool Fence
2D	300914	85x100mm	ANOD NATURAL		*Glass to Post		
45		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		or Wall		
POOL GATE	300921	83x100mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH (GLASS TO ROUND POST)	300922	83x100mm	SSS	STEEL	LATCH*		Pool Fence
1	300920	83x100mm	ANOD NATURAL		*Glass to		
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		Round Post		U
POOL GATE	300909	115x100mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH 90 DEGREE (GLASS	300910	115x100mm	SSS	STEEL	LATCH*		Pool Fence
TO GLÀSS)	300908	115x100mm	ANOD NATURAL		*90 Degree		
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		(Glass to Glass)		
MALIBU POOL	300900	128x103mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH (GLASS TO GLASS)	300901	128x103mm	SSS	STEEL	LATCH*		Pool Fence
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		*180 degree (Glass to Glass)		\square







Pool Gate Latches For Pivot Doors / Gates (Exterior Lockset)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MALIBU POOL LATCH (GLASS TO WALL)	300902 300903	95x103mm 95x103mm	PSS SSS	316 STAINLESS STEEL	POOL GATE LATCH*	PIVOT DOOR	External Pool
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		*Glass to Post or wall		Fence
OZONE POOL	300906	104x75mm	SSS	2205 STAINLESS	POOL GATE	PIVOT DOOR	External
GATE LATCH (GLASS TO GLASS)		GLASS THICKNESS: 12mm	ON REQUEST: POWDERCOAT	STEEL	LATCH* *180 degree (Glass to Glass)		Pool Fence
OZONE POOL	300907	90x75mm	SSS	2205 STAINLESS	POOL GATE	PIVOT DOOR	External
GATE LATCH 90 DEGREE (GLASS TO GLASS)		GLASS THICKNESS: 12mm	ON REQUEST: POWDERCOAT	STEEL	LATCH* *90 Degree (Glass to Glass)		Pool Fence
OZONE POOL	300905	65x74mm	SSS	2205 STAINLESS	POOL GATE	PIVOT DOOR	External
GATE LATCH (GLASS TO POST)		GLASS THICKNESS: 12mm	ON REQUEST: POWDERCOAT	STEEL	LATCH* *Glass to Post or wall		Pool Fence
MALIBU POOL	300899	60x73mm	N/A	BLACK*	POOL GATE	PIVOT DOOR	External
LATCH (GLASS TO GLASS)				*Molded polymers & stainless steel	LATCH* *Glass Gate Hardware Kit designed to fit 50mm round posts		Pool Fence







Digital Lock Set For Pivot Doors (Electronic Lockset)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
YALE SMART TOUCH DIGITAL LOCKSET	300960	180x65mm GLASS THICKNESS: 10-12mm	SILVER	N/A	DIGITAL DOOR LOCK* *Mechanical Digital Door Lockset (Glass to Glass) or (Glass to Solid Jamb).	PIVOT DOOR	Keyless Access Solutions Residential and Commercial applications
YALE SMART TOUCH GLASS KEEPER	300959	178x34mm GLASS THICKNESS: 10-12mm	SILVER	N/A	DIGITAL DOOR LOCK* *Mechanical Digital Door Lockset (Glass to Glass) or (Glass to Solid Jamb).	PIVOT DOOR STRIKE	Keyless Access Solutions Residential and Commercial applications
YALE ALUMINIUM	301485	178x34mm	SILVER PEARL	ALUM	STRIKE PLATE	PIVOT DOOR	Keyless
/ TIMBER STRIKE PLATE		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		*Additional replacement option.	COMPONENT	Access Solutions Residential and Commercial applications

NOTE: Digital Lock is ordered on request only.



Yale SmartTouch – Digital Locking System





The YALE SmartTouch is a touch screen digital lock for frameless glass doors and entrances.

Design of the YALE SmartTouch has a sleek flush design which can be fitted to 10 and 12mm frameless glass doors and side panels without the need for holes and notches in the glass. It uses a bonded wrap around design which means it can be retrofitted to existing doors, with a minimum 3mm clearance gap.

Key Features

- Residential and commercial applications
- Waterproof external keypad for external use
- Keypad activated by three point touch
- 6 to 12 digit entry code, which can be scrambled for security
- Supplied with 4 touch cards (extras available)
- Remote module option available (Operating range up to 30 metres)
- Automatic lock or manual lock setting available
- Battery operated (4 x AA)
- Use on 10 or 12 mm single or double action glass doors
- Use with glass side panels or solid jambs
- No holes or notches required in glass
- ▶ Fits existing doors with minimum 3mm clearance
- Fitted with high bond tape

Material & Finish

The YALE SmartTouch has a sleek black and silver finish and the key pad appears on the mirror screen when touched

System Types

- The YALE SmartTouch model and is available in following options
- Digital Lock Glass Keeper
- Digital Lock Timber Keeper

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz







Frameless Pool Fences, Gates and Wind Break Screens

Frameless glass fencing is unobstructive, easy to maintain, and is extremely difficult to scale and climb, perfect for pool enclosures. A number of configurations are possible, fitted with corrosion resistant stainless steel or aluminium fittings.







Frameless Pool Fences, Gates and Wind Break Screens

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AREA ICONS KEY:





PIVOT DOORS





PRODUCT OVERVIEW

Frameless Pool Fences, Gates and Wind Break Screens

A glass pool fence is the optimal choice for securing a swimming pool without limiting the view of your pool area. Metro has numerous options available from floor mounted to face fix solutions. These are complemented by self-closing pool gates, latches, pivot arms and floor springs which are manufactured in quality marine grade 316 stainless steel, and engineered to last.

Glass Windbreaks are an elegant solution, allowing unobstructed clear views of your pool, patio, and landscape. Our glass pool fences and glass railing systems add value to your property and reflect a growing trend in design and safety.





Guideline to Pool Fencing Regulations

A fence is required to enclose an area containing water more than 400mm deep. It must comply with pool safety legislation (NZBC clause F9 and 162C of the building Act).

- A pool fence may be a complete isolation barrier (4 Sides).
- Or it may incorporate parts of the house.
- And or sections of an existing boundary fence, where it permits.

No part of the pool enclosure should allow children to climb over the pool fence, including climbable objects such as tables, rocks, trees.

Pool Gates

- Minimum 1200mm high and at least a 1200mm arc from any permanent projection or object permanently placed on the ground outside.
- Must open outward, away from the pool area.
- Must self-close and latch into position.
- Any release latch is required to be 1500mm above ground level/or 300mm down the inside of the gate (1200+300=1500).
- Recommended 10-12mm thick TEMPAFLOAT® Toughened Safety Glass. (Matches Hinges) (In Accordance with Wind Zone).
- There shall be no openings in the pool gate that a 100mm diameter sphere could pass through.

Pool Fencing

- Minimum 1200mm high and at least a 1200mm arc from any permanent projection or object permanently placed on the ground outside.
- Recommended 10-12mm thick TEMPAFLOAT® Toughened Safety Glass. (Matches Hinges) (In Accordance with Wind Zone).
- Where local fencing is also balustrading (protecting a fall of 1000mm or more) it must comply with the "Balustrading" regulation AS/NZS 1170:2002, NZS 4223.3.2016, NZ Building Code B1, B2, F2, F4 and F9, where applicable.
- There shall be no openings in the pool fence that a 100mm diameter sphere could pass through.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



POOL FENCES, GATES AND SCREENS

Standard Pool Gate Components

Pivot Arms (Top and Bottom Patches), Sealing Compound, Grout.



Dreduct	Madal	Cizoo mm	Finich	Matanial	Tupo	Application	Anoo
Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
PATCH TO PATCH POOL GATE PIVOT ARM	301133 301134	240x29mm 240x29mm	PSS SSS	316 STAINLESS STEEL	PIVOT ARM FIXING:	POOL GATE PIVOT ARM	Pool Gates
*Used with two MP20 Patch Fittings		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		PATCH TO PATCH	USED WITH X2 MP20 TOP PATCH FITTING	Internal & External
GLASS TO GLASS	301135	140x75mm	PSS	316 STAINLESS	PIVOT ARM	POOL GATE	Pool
PATCH POOL GATE PIVOT ARM	301136	140x75mm	SSS	STEEL	FIXING:	PIVOT ARM	Gates
e el B		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		GLASS TO PATCH	USED WITH X2 MP20 TOP PATCH FITTING	Internal Ə External
WALL MOUNT	301144	84x60mm	PSS	316 STAINLESS STEEL	PIVOT ARM FIXING:	POOL GATE	Pool
TO PATCH POOL GATE PIVOT ARM	301143	84x60mm	SSS			PIVOT ARM	Gates
* 11		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		WALL TO PATCH	USED WITH X2 MP20 TOP PATCH FITTING	Internal & External
TOP PATCH	301092	164x50x30mm	ANOD NATURAL	316 STAINLESS	TOP PATCH	GLASS PATCH	Pool
FITTING	301093	164x50x30mm	PSS	STEEL	FITTING	TO PIVOT ARM	Gates
1	301094	164x50x30mm	SSS				Internal &
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				External
OZONE	301077	Non Hold Open	SSS	316 STAINLESS	HYDRAULIC	POOL GATE	Pool
HYDRAULIC BOTTOM PATCH		GLASS THICKNESS: 12mm	ON REQUEST: POWDERCOAT	STEEL	BOTTOM PATCH FIXING: PATCH TO PATCH	SELF CLOSING	Gates Internal & External
BTS84 FLOOR SPRING	500583	15NM (Weak Strength)	SSS	316 STAINLESS STEEL	HYDRAULIC FLOOR	STD PIVOT DOOR	Internal & External
HYDRAULIC PATCH KIT	500581	25NM (Std Strength)	SSS		MOUNTED PATCH FITTING		
-		Non Hold Open GLASS THICKNESS: 8-12mm Max Door Weight 100kg	ON REQUEST: POWDERCOAT				

ADDITIONAL: LATCH SELECTION REQUIRED

(Refer Handle selection table for additional options).

NOTE: Allowance must be made in the glass panel for cut out holes (Latch).



POOL FENCES, GATES AND SCREENS

Standard Pool Gate Components

Pivot Arms (Top and Bottom Patches), Sealing Compound, Grout.

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
MFX840 FLOOR SPRING	300549	15NM (Weak Strength)	Strength) SSS STEEL FLO	SSS STEEL FLOOR	FLOOR	STD PIVOT DOOR	Internal & External
HYDRAULIC PATCH	300547	25NM (Std Strength)	SSS		MOUNTED PATCH FITTING		È
- Cm		Non Hold Open GLASS THICKNESS: 8-12mm 307mm x 108mm x 40mm	ON REQUEST: POWDERCOAT		*Supplied with std 5mm extended spindles		
FLOOR SPRING	300552	145/435ml	N/A	N/A	SEALING	PROTECT	Pool
					COMPOUND	FLOOR SPRING SUITS COMPONENT: MFX840 BTS84 FLOOR SPRINGS	Gates Internal & External
SIKA GROUT	300005	25kg Bag	N/A	N/A	GROUT	LEVEL FLOOR SPRING	Pool Gates
A							Internal & External

ADDITIONAL: LATCH SELECTION REQUIRED

(Refer Handle selection table for additional options).

NOTE: Allowance must be made in the glass panel for cut out holes (Latch).





Ozone Pool Gate Latch & Pivot Arms

7

An Ozone Hydraulic Patch is a revolutionary closer that incorporates an adjustable self closing mechanism into the bottom patch fitting alleviating the need for a floor spring. Four screw holes are all that is required to fix into timber, concrete or steel. A top patch, pool gate arm and latch are also required and will differ depending on your application.









Key Features

- ▶ Hydraulic self closing bottom patch fitting.
- Glass Mounted Pivot Arm (Inline).
- Glass Mounted Pivot Arm (90 degrees to Glass).
- ▶ Wall Mounted Pivot Arm.
- Post Mounted Pivot Arm.
- Top Patch Fitting.
- Pool Gate Latch 180 degree glass to glass (Inline).
- Pool Gate Latch 90 degree.
- Suits 12mm glass thickness.
- Adjustable closing speed.
- External and internal application.
- 316 or 2205 Satin Stainless Steel Finish as standard. Special colours available on request.
- Powder coated special colours available.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



Ozone Plus EN5

- High Strength Hydraulic Patch.
- For more information, please refer to the Frameless Commercial Doors Section 3, page 328.



POOL FENCES, GATES AND SCREENS

ol Gate Components and Bottom Patches), Sealing Compound, Grout.

10 YEAR
HARDWARE WARRANTY

	FUUL FE
S	Ozone Poo Pivot Arms (Top :
ш	Product
Ш С	OZONE HYDRAULIC BOTTOM PATCH
С N	
ND	OZONE GLASS TO PATCH PIVOT ARM
A N	и •
ATE	OZONE WALL MOUNT TO PATCH POOL GATE PIVOT ARM
G	D
C E C	OZONE POST MOUNT TO PATCH POOL GATE PIVOT ARM
U N E	
ш —	OZONE 90 DEGREE GLASS MOUNT TO PATCH POOL GATE PIVOT ARM
	TOP PATCH FITTING

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
OZONE HYDRAULIC BOTTOM PATCH	301077	183x70mm GLASS THICKNESS: 12mm	SSS ON REQUEST: POWDERCOAT	316 STAINLESS STEEL	HYDRAULIC BOTTOM PATCH FIXING: PATCH TO PATCH	POOL GATE SELF CLOSING	Pool Gates Internal & External
OZONE GLASS TO PATCH PIVOT ARM	301137	140x75mm GLASS THICKNESS: 12mm	SSS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	PIVOT ARM FIXING: GLASS TO PATCH	POOL GATE PIVOT ARM USED WITH X1 MP20 TOP PATCH FITTING	Pool Gates Internal & External
OZONE WALL MOUNT TO PATCH POOL GATE PIVOT ARM	301138	84x60mm GLASS THICKNESS: 12mm	SSS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	PIVOT ARM FIXING: WALL TO PATCH	POOL GATE PIVOT ARM USED WITH X1 MP20 TOP PATCH FITTING	Pool Gates Internal & External
OZONE POST MOUNT TO PATCH POOL GATE PIVOT ARM	301139	109x59mm GLASS THICKNESS: 12mm	SSS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	PIVOT ARM FIXING: POST TO PATCH	POOL GATE PIVOT ARM USED WITH X1 MP20 TOP PATCH FITTING	Pool Gates Internal & External
OZONE 90 DEGREE GLASS MOUNT TO PATCH POOL GATE PIVOT ARM	301140	74x110mm GLASS THICKNESS: 12mm	SSS ON REQUEST: POWDERCOAT	2205 STAINLESS STEEL	PIVOT ARM FIXING: 90 DEGREE GLASS TO PATCH	POOL GATE PIVOT ARM USED WITH X1 MP20 TOP PATCH FITTING	Pool Gates Internal & External
TOP PATCH FITTING	301092 301093 301094	164x50x30mm 164x50x30mm 164x50x30mm GLASS THICKNESS: 10-12mm	ANOD NATURAL PSS SSS ON REQUEST: POWDERCOAT	316 STAINLESS STEEL	TOP PATCH FITTING	GLASS PATCH TO PIVOT ARM	Pool Gates Internal & External
BASE PLATE	301124 301123	5mm 10mm *5mm increases clearance to 17mm 10mm increases clearance to 22mm	SSS SSS ON REQUEST: POWDERCOAT	316 STAINLESS STEEL	PIVOT ARM FIXING: GLASS TO PATCH	POOL GATE PIVOT ARM USED WITH X2 MP20 TOP PATCH FITTING	Pool Gates Internal & External

ADDITIONAL: LATCH SELECTION REQUIRED

(Refer Handle selection table for additional options)

NOTE: Allowance must be made in the glass panel for cut out holes (Latch)







Laguna & Malibu Gate Hinges

Laguna and Malibu hinges are hydraulic and suitable for 10-12mm glass. The Laguna hinge can accommodate a maximum gate width of 1000mm and the Malibu range 900mm.



Laguna (High Strength) Gate Hinge (For Doors 1000mm in width)

Key Features

- Self-closing gate hinges designed to close gates up to 1000mm wide.
- ▶ Suits 10 12mm glass thickness.
- Adjustable closing speed.
- External and internal application.
- ▶ Hinges are non-hold open.
- ▶ Glass to Glass.
- ▶ Wall to Glass.
- Right hand or Left Hand Opening.
- > 316 Satin or Polished Stainless Steel Finish as standard.



Malibu Gate Hinge (For Doors 900mm in Width)

Key Features

- Self-closing gate hinges designed to close gates up to 900mm wide.
- ▶ Suits 10 12mm glass thickness.
- Adjustable closing speed.
- External and internal application.
- ▶ Hinges are non-hold open.
- Glass to Glass.
- ▶ Wall to Glass.
- Right hand or Left Hand Opening.
- 316 Satin or Polished Stainless Steel Finish as standard. Special colours available on request.
- Powder coated special colours available.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



POOL FENCES, GATES AND SCREENS

Laguna / Malibu - Pool Gate Hinges

Pivot Arms (Top and Bottom Patches), Sealing Compound, Grout.



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
LAGUNA POOL GATE HINGE	300786	159 x 110mm	SSS	316 STAINLESS STEEL	DOOR HINGE NON HOLD	PIVOT DOOR	Pool Gates
	300785	159 x 110mm	PSS	JIEL	OPEN		Internal &
(HIGH STRENGTH)		GLASS			FIXING:		External
		THICKNESS: 10-12mm			GLASS TO		
		Max Gate			GLASS		ΨU
H		Width 1000mm					
LAGUNA POOL	300790	110x 77x60mm	SSS	316 STAINLESS	DOOR HINGE	PIVOT DOOR	Pool
GATE HINGE	300789	110x 77x60mm	PSS	STEEL	NON HOLD	11001 00011	Gates
(нібн		GLASS		-	OPEN		Internal &
STRENGTH)		THICKNESS:			FIXING:		External
-L		10-12mm			WALL TO GLASS		
1		Max Gate					Ψ ^Δ
		Width 1000mm					
LAGUNA POOL GATE HINGE	300792	110x 77x60mm	SSS	316 STAINLESS	DOOR HINGE	PIVOT DOOR	Pool
	300791	110x 77x60mm	PSS	STEEL	NON HOLD OPEN (OFFSET		Gates Internal S
(HIGH STRENGTH)		GLASS			BACKPLATE)		External
		THICKNESS: 10-12mm			FIXING:		
					WALL TO GLASS		ΨΨ
		Max Gate Width 1000mm					
MALIBU POOL	300774	125 x 104mm	SSS	316 STAINLESS	DOOR HINGE	PIVOT DOOR	Pool
GATE HINGE	300773	125 x 104mm	PSS	STEEL	NON HOLD		Gates
(нібн		GLASS			OPEN FIXING: GLASS TO GLASS		Internal & External
STRENGTH)		THICKNESS:					
-		10-12mm					Щ
-		Max Gate					
		Width 900mm					
MALIBU POOL	300782	104x60x60mm	SSS	316 STAINLESS	DOOR HINGE	PIVOT DOOR	Pool
GATE HINGE	300781	104x60x60mm	 PSS	STEEL	NON HOLD		Gates
(нібн	000701	GLASS	, 33	1	OPEN		Internal &
STRENGTH)		THICKNESS:			FIXING:		External
B		10-12mm			WALL TO GLASS		
		Max Gate					
		Width 900mm					
MALIBURDOOL	300780	104x60x60mm	SSS	316 STAINLESS	DOOR HINGE		Pool
MALIBU POOL GATE HINGE	300780	104x60x60mm		STEEL	NON HOLD	PIVOT DOOR	Gates
(нібн	550775		100	-	OPEN (OFFSET BACKPLATE)		Internal &
STRENGTH)		GLASS THICKNESS:					External
		10-12mm			FIXING: WALL TO		│ ∐] │
		Max Gate			GLASS		
		Width 900mm					
				ļ	ļ		

HINGE GLASS CUT OUT. (Refer to Hinge Cut Out details for Hinge Glass Preparation)

NOTE: Allowance must be made in the glass panel for cut out holes

ADDITIONAL: LATCH SELECTION REQUIRED. (Refer Handle selection table for additional options)

NOTE: Allowance must be made in the glass panel for cut out holes (Latch)



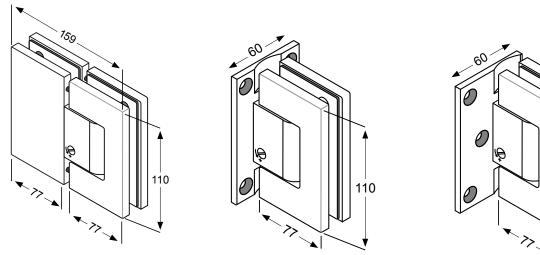


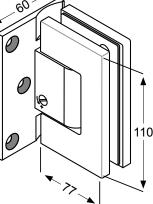
7

FRAMELESS COMMERCIAL DOORS

Installation / Fitting Instructions

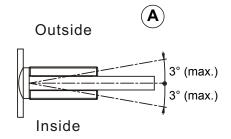
Laguna Hydraulic Door Hinges

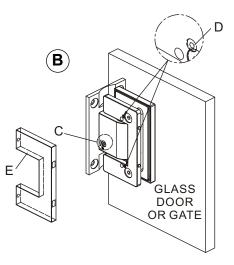




Door alignment

- 1. Remove covers (E)
- 2. Loosen allen screws by 360° (D)
- 3. Adjust to required angle and retighten allen screws (D)
- 4. (C) is slotted speed valve.





These self closing hydraulic gate hinges are designed to close gates up to 1000mm wide in external

and in internal installations. They are designed to be used with the range of MFG Mag Latches for

pool gates. Hinges are Non Hold Open. The hinges are available in both glass to glass and glass to post/wall models and both models are Non Handed, meaning they can be hung on either side of the gate opening.

Gaskets are provided so the glass gate and side panels can be 10mm or 12mm toughened glass.

1. Remove clip on covers and install the hinges. Ensure all clearances are correct.

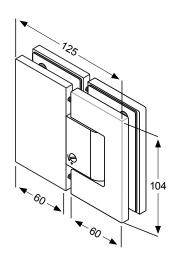
- 2. If gate requires alignment, loosen allen keys on both hinges by 360° as per detail B. Set the door to correct alignment and retighten allen screws.
- 3. To set closing speed, close slotted screws on both hinges then open both 1/4 of a turn. Then open or close slotted valves to obtain required closing speed. Take care to ensure the valves of each hinge are synchronized so they close at equal speed.
- 4. Install clip on covers.

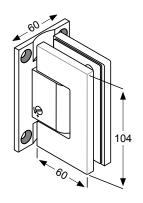


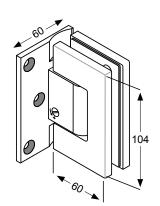
FRAMELESS COMMERCIAL DOORS

Installation / Fitting Instructions

Malibu Hydraulic Door Hinges

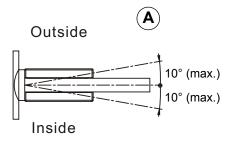


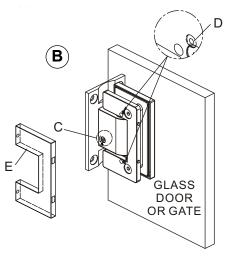




Door alignment

- 1. Remove covers (E)
- 2. Loosen allen screws by 360° (D)
- 3. Adjust to required angle and retighten allen screws (D)
- 4. (C) is slotted speed valve.





These self closing hydraulic gate hinges are designed to close gates up to 900mm wide in external

and in internal installations. They are designed to be used with the range of MFG Mag Latches for

pool gates. Hinges are Non Hold Open. The hinges are available in both glass to glass and glass to post/wall models and both models are Non Handed, meaning they can be hung on either side of the gate opening.

Gaskets are provided so the glass gate and side panels can be 10mm or 12mm toughened glass.

1. Remove clip on covers and install the hinges. Ensure all clearances are correct.

- 2. If door requires alignment, loosen allen keys on both hinges by 360° as per detail B. Set the door to correct alignment and retighten allen screws.
- 3. To set closing speed, close slotted screws on both hinges then open both ¼ of a turn. Then open or close slotted valves to obtain required closing speed. Take care to ensure the valves of each hinge are synchronized so they close at equal speed.
- 4. Install clip on covers.



Pool Gate Latches

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A number of options and styles available to suit all applications, meeting all legislative requirements under the New Zealand building code.

3

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Key Features

- Glass to Glass.
- Glass to Post.
- Glass to Wall Latch.
- Glass to Round Post.
- ▶ 90degree Glass to Glass Latch.
- 316 Satin or Polished Stainless Steel Finish as standard. Special colours available on request.
- ▶ Powder coated special colours available.
- ▶ Suits 10 12mm glass.
- Magnetic Bolt lock options.
- Malibu Latches designed to match both the Malibu and Laguna series pool gate hinge design.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



POOL FENCES, GATES AND SCREENS

Pool Gate Latches

Pivot Doors / Gates – Exterior Lockset



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
POOL GATE LATCH (GLASS	300918	105x100mm	PSS	316 STAINLESS	POOL GATE LATCH*	PIVOT DOOR	External
TO GLASS)	300919	105x100mm	SSS	STEEL	*180 degree (Glass to		Pool Fence
	300917	105x100mm	ANOD NATURAL				
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		Glass)		
POOL GATE	300912	97x50mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH (GLASS TO POST)	300913	97x50mm	SSS	STEEL	LATCH*		Pool Fence
	300911	97x50mm	ANOD NATURAL		*Glass to Post		
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
POOL GATE	300915	85x100mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH (GLASS TO WALL	300916	85x100mm	SSS	STEEL	LATCH*		Pool Fence
	300914	85x100mm	ANOD NATURAL		*Glass to Post		
4		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		or Wall		
POOLGATE	300921	83x100mm	PSS	316 STAINLESS STEEL	POOL GATE LATCH* *Glass to Round Post	PIVOT DOOR	External Pool Fence
LATCH (GLASS TO ROUND POST)	300922	83x100mm	SSS				
	300920	83x100mm	ANOD NATURAL				
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
POOL GATE	300909	115x100mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH 90 DEGREE (GLASS	300910	115x100mm	SSS	STEEL	LATCH* *90 Degree (Glass to Glass)		Pool Fence
TO GLASS)	300908	115x100mm	ANOD NATURAL				
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT				
MALIBU POOL	300900	128x103mm	PSS	316 STAINLESS	POOL GATE LATCH*	PIVOT DOOR	External
LATCH (GLASS TO GLASS)	300901	128x103mm	SSS	STEEL			Pool Fence
		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		*180 degree (Glass to Glass)		\square
MALIBU POOL	300902	95x103mm	PSS	316 STAINLESS	POOL GATE	PIVOT DOOR	External
LATCH (GLASS TO WALL)	300903	95x103mm	SSS	STEEL	LATCH		Pool Fence
-		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT		*Glass to Post or wall		
OZONE POOL	300906	104x60x60mm	SSS	2205 STAINLESS	POOL GATE	PIVOT DOOR	Pool
GATE LATCH (GLASS TO GLASS)		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT	STEEL	LATCH* *180 degree (Glass to		Gates Internal & External
		Max Gate Width 900mm			Glass)		\square

NOTE: Allowance must be made in the glass panel for cut out holes



POOL FENCES, GATES AND SCREENS

Pool Gate Latches

Pivot Doors / Gates – Exterior Lockset

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
OZONE POOL	300907	90x75mm	SSS	2205 STAINLESS	POOL GATE	PIVOT DOOR	External
GATE LATCH 90 DEGREE (GLASS TO GLASS)		GLASS THICKNESS: 12mm	ON REQUEST: POWDERCOAT	STEEL	LATCH* *90 Degree (Glass to Glass)		Pool Fence
OZONE POOL	300905	65x74mm	SSS	2205 STAINLESS	POOL GATE	PIVOT DOOR	External
GATE LATCH (GLASS TO POST)		GLASS THICKNESS: 10-12mm	ON REQUEST: POWDERCOAT	STEEL	LATCH *Glass to Post or wall		Pool Fence
MAGNA LATCH	300899	60x73mm	N/A	BLACK*	POOL GATE	PIVOT DOOR	External
				*Molded polymers 0 stainless steel	LATCH *Glass Gate Hardware Kit designed to fit 50mm round posts		Pool Fence

NOTE: Allowance must be made in the glass panel for cut out holes



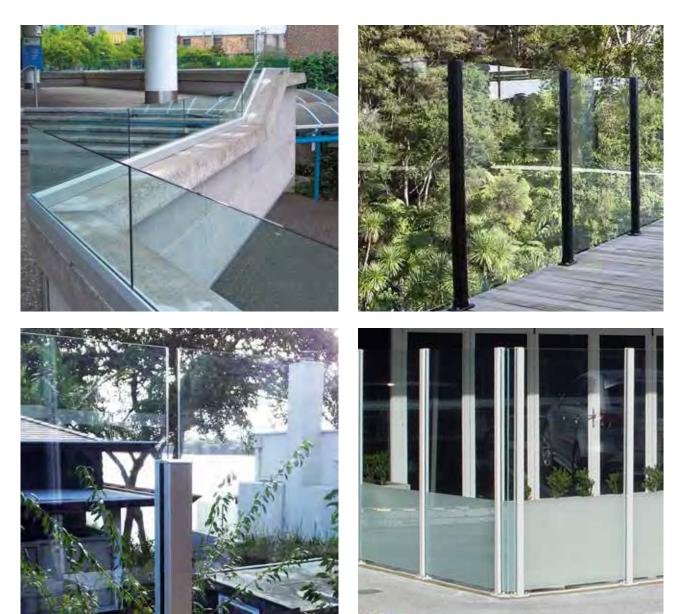




Wind Break Systems

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A frameless glass windbreak means you can enjoy your favourite space all year round. Perfect for windswept outdoor spaces and to block off cold southerly winds without interrupting or blocking those views.



NOTE: If protecting a fall greater than a metre, please refer through to the Balustrade section.

Key Features

- Custom designed to fit your space, windbreaks can be used for commercial and residential properties.
- Shut out unexpected winds or rain and keep them closed in Winter to stay warm but without interrupting the view.
- Frameless glass windbreaks allow you to enjoy your favourite place all year round.

Types

Our Windbreak and Privacy Screen system works in conjunction with our balustrade systems. Please view Section 1 for selection and specification.

Scope of Use

- Protection from the elements including but not limited to wind, rain, sun. Our frameless glass windbreaks can be applied in many different ways. From protecting your outdoor dining area to a contemporary apartment building zoning solution.
- Windbreaks can also be used as Privacy screens for modern apartment buildings consisting of communal and zoned spaces aimed at enhancing the inner-city lifestyle.
- Windbreaks require extra consideration for wind loadings dependent on the size of the screen and support required to resist the implied loads.

Support Inquiries

 Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz







Frameless Glass Canopies

Bespoke frameless glass canopies provide strength, light and protection from the elements. All of our systems are designed and engineered in New Zealand via Metro's Engineering Department.

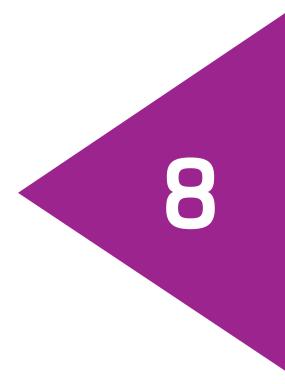






Frameless Glass Canopies

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AUSTVISION SPIDERCANOPY –	
CANOPY SYSTEM	514



AREA ICONS KEY:



CANOPY

PRODUCT OVERVIEW

Frameless Glass Canopies

A glass canopy provides an attractive and practical feature to any commercial or residential project. The contrast between the old and the new, and the crisp, clean lines looks very contemporary. Often placed outside entrance doors, a canopy protects people entering the building. But they certainly are not limited to front doors; canopies over deck areas keep the weather away from the doors, allowing protection from the elements and natural light through to the entrance area.





Guidance Notes for Frameless Structural Glass Canopies

Glass Canopies and roof lights and skylights can utilise the unique properties of TEMPAFLOAT® toughened and SAFELITE® EVA or SAFELITE® STF (Sentry®) toughened laminated safety glass and provide lightweight floating glass skins fixed either on top or underneath the structure with proprietary fixings. The glass can either be clear or extra clear low iron glass, tinted or reflective glass and/or TEMPASCREEN® screen printed glass with special designs for shading and special effects.

Tension Rod and Spider Systems

Canopies can be suspended using tension rods or connected to a disc or spider fitting, and gutters can be connected to the glass for water drainage. Slopes and angles for drainage can be created with a sloped structure or by utilising the adjustable design features of the tension rods and spiders including the articulating swivel fixings.

Glass Design

www.metroglass.co.nz

Glass canopy design can be complex and dependant on the design loads, structure and glass fixing method. For specific design please refer through to our technical dept.

Disc Fittings

Disc fittings are normally used if the glass is hung from the fittings and/or in more exposed conditions to provide a seal around the hole. These fittings are normally 50mm in diameter depending on the fitting design.

Articulated Swivel Fixings

The articulated swivel fixing consists of a ball joint type fixing with a countersunk or disc fitting to the glass. The swivel joint fixing on the glass panel is free to rotate up to 5 degrees in angle in any direction and laboratory tests show that the actual stress around the glass hole is greatly reduced compared to the standard fitting. This can be important in very high loading conditions. Glass panels fixed with swivel joints expect to deflect more than glass panels fixed with standard countersunk fittings.

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Austvision Tierod – Canopy System

The Austvision TieRod Canopy System was designed and developed for residential and commercial entrances with a strong emphasis on simplicity in design and ease of installation.

8



Specific Engineering design is required when tied back to a single fixing point.

Key Features

- 316 Stainless Steel Components for long life and increased strength (Good corrosion resistance)
- The 60/22-22n swivel glass connectors are designed with 6° rotation in any direction to reduce the stress around the glass hole compared to conventional fixed connectors.
- Fixing positions can be changed to have the glass sloping towards or away from the structure
- Multiple configurations are available (From a single canopy rows of canopies to suit particular installations).

Standard designs are available as follows:

- C1- 1 pane 2 tie rods.
- Custom designs are also available on request.

The system is glazed with Metro Performance Glass, as follows:

- ▶ Toughened Heat Soak Glass
- ▶ Toughened Screen Print Glass
- ▶ Toughened Digital Print Glass
- SAFELITE® EVA or SAFELITE® STF (Sentry®) toughened laminated structural glass. Note that breakage characteristic and edge protection requirements may alter with different types of interlayers.

Scope of Use

- A glass canopy enables through light while still providing overhead weather protection.
- A Tierod with forks enables the glass to be attached and fixed back to the structure.

Compliance

 Austvision Tierod Systems require specific design on a project basis subject to design loads.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

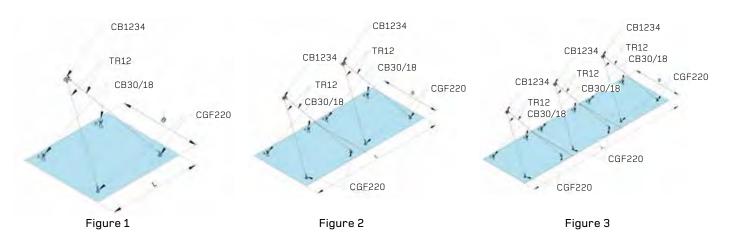


Austvision Tierod Canopy System



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
AUSTVISION TIEROD GLASS CANOPY KIT	500000	L= 1500mm B=1400mm 10mm	SSS	316 STAINLESS STEEL	TIEROD CANOPY	GLASS CANOPY KIT	Commercial & Residential
4	500001	L= 1700mm B=1600mm 12mm	SSS				
\langle		GLASS THICKNESS: 10-12mm					
See figure 1 below for enlargement							
AUSTVISION TIEROD GLASS CANOPY KIT	500002	L= 2600mm B=1400mm 10mm	SSS	316 STAINLESS STEEL	TIEROD CANOPY	CANOPY CANOPY KIT	Commercial & Residential
	500003	L= 3000mm B=1600mm 12mm	SSS				
2		GLASS THICKNESS: 10-12mm					
See figure 2 below for enlargement							
AUSTVISION TIEROD GLASS CANOPY KIT	500004	L= 3700mm B=1400mm 10mm	SSS	316 STAINLESS STEEL	TIEROD CANOPY	GLASS CANOPY KIT	Commercial & Residential
THE	500005	L= 4300mm B=1600mm 12mm	SSS				
Care -		GLASS THICKNESS: 10-12mm					
See figure 3 below for enlargement							

NOTE: For glass thicknesses other than 10-12mm please specify when order placement is made. Glass dimensions and thickness subject to specific design.



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Austvision Tierod Canopy Components



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
AUSTVISION TIEROD ONE WAY GLASS TO WALL BRACKET	500009		SSS	316 STAINLESS STEEL	TIEROD CANOPY BRACKET	GLASS TO WALL BRACKET	Commercial & Residential
		GLASS THICKNESS: Suitable for 10mm to 19mm TSG				*Includes 60/22/22n Swivel	
		Suitable for 11.5mm to 22mm TLSG					
AUSTVISION TIEROD ONE WAY BRACKET	500010	106x28mm M10 holes	SSS	316 STAINLESS STEEL	TIEROD CANOPY BRACKET	WALL TO TIEROD BRACKET	Commercial & Residential
						*Includes 7mm Cir-clip & Clevis Pin	
AUSTVISION TIEROD TWO WAY BRACKET	500008	90x60mm M12 holes	SSS	316 STAINLESS STEEL	TIEROD CANOPY BRACKET	WALL TO TIEROD BRACKET	Commercial & Residential
						*Includes 7mm Cir-clip 8 Clevis Pin	
COUNTERSUNK SCREW	301281	M10 x 100mm CSK	SSS	316 STAINLESS STEEL	COACH SCREW	TIMBER FIXING	Commercial & Residential
AUSTVISION TIEROD ONE WAY GLASS BRACKET	500011	M12 holes	SSS	316 STAINLESS STEEL	TIEROD CANOPY BRACKET	TIEROD TO GLASS BRACKET	Commercial & Residential
J.		GLASS THICKNESS: Suitable for 10mm to 19mm TSG				*Includes 60/22/22n Swivel	
9		Suitable for 11.5mm to 22mm TLSG					
AUSTVISION TIEROD TWO WAY GLASS BRACKET	500012	90x60mm M12 holes	SSS	316 STAINLESS STEEL	TIEROD CANOPY BRACKET	TIEROD TO GLASS BRACKET	Commercial & Residential
		GLASS THICKNESS: Suitable for 10mm to 19mm TSG			DIAGKET	*Includes 60/22/22n Swivel	
		Suitable for 11.5mm to 22mm TLSG					
AUSTVISION TIEROD THREE WAY BRACKET	500288	90x60mm M12 holes	SSS	316 STAINLESS STEEL	TIEROD CANOPY BRACKET	WALL TO TIEROD BRACKET	Commercial & Residential
						*Includes 7mm Cir-clip 8 Clevis Pin	
TIEROD (M12)	500006	12mm dia. M12 thread	SSS	316 STAINLESS STEEL	TIEROD CANOPY	GLASS CANOPY KIT	Commercial &
							Residential

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Austvision SpiderCanopy – Canopy System

The Austvision SpiderCanopy System can be used for both residential and commercial applications requiring large panes and support spans for high design wind, snow and live loads.

The SpiderCanopy System utilises Austvision 445 series or 446 series spider fittings to transfer the loads from the glass to the supporting members.

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Key Features

- Use of the spider fittings reduces installation time and provides ease of adjustment on site.
- Fixed disc or swivel fittings can be used. Swivels are designed with 6° rotation in any direction and these reduce the stresses around the glass holes compared to conventional fixed disc fittings
- All spider fittings are cast 316 marine grade satin stainless steel, in satin or polished finish. (Good corrosion resistance)
- Easy to measure and install
- Swivel fittings to reduce glass stresses around holes.

Types:

The SpiderCanopy System has 4 fixing options;

- ▶ 443 series 4 way or 2 way light duty spider fittings
- ▶ 444 series 4 way or 2 way light duty spider fittings
- ▶ 445 series 4 way or 2 way heavy duty spider fittings
- ▶ 446 series 4 way or 2 way heavy duty spider fittings

Glass fixings can be M10 CSK Disc or 60/22-22n swivel disc to suit the application and glass thickness.

The system is glazed with Metro Performance Glass, as follows:

- Suitable for 10mm to 19mm TEMPASOAK[®] toughened safety glass
- ▶ Toughened Heat Soak Glass
- ▶ Toughened Screen Print Glass
- ▶ Toughened Digital Print Glass
- Suitable for 11.5 to 32mm SAFELITE® EVA or SAFELITE® STF (Sentry®) toughened laminated structural glass
- Note that breakage characteristic and edge protection requirements may alter with different types of interlayer

Compliance

 SpiderCanopy System requires specific design on a project basis subject to design loads.

Scope of Use

 A glass canopy enables light through while still providing overhead weather protection.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz





Spider Fittings (Lightweight)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
444/4 SPIDER	500123	M8 CSK SCREW	PSS	316 STAINLESS	SPIDER	LIGHT WEIGHT	Frameless
	500124	M8 CSK SCREW WITH DISC	PSS	STEEL		SPIDER	Standoff Assemblies Commercial
¢35/ 120	500125	M10 CSK SCREW	PSS				& Residential
	500126	M10 CSK SCREW WITH DISC	PSS				
	500127	M8 CSK SCREW	SSS				
	500128	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
	500129	M10 CSK SCREW	SSS				
- 42 -	500130	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW	M10 Csk SCREW	110 Csk SCREW
		SPECIFY THICKNESS		NOTE: CSK fixing	WITH Ra DISC	a thicker glass s	wITH Ra DISC election.
444/4/2 SPIDER	500131	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500132	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
¢35	500133	M10 CSK SCREW	PSS				8 Residential
	500134	M10 CSK SCREW WITH DISC	PSS				
42.8	500135	M8 CSK SCREW	SSS				
	500136	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	·
	500137	M10 CSK SCREW	SSS				
	500138	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW			110 Csk SCREW
-42.8-		SPECIFY THICKNESS		NOTE: CSK fixing	wITH Ra DISC	e a thicker glass s	with Ra DISC election.
444/2 SPIDER	500107	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500108	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
	500109	M10 CSK SCREW	PSS				8 Residential
	500110	M10 CSK SCREW WITH DISC	PSS				
	500111	M8 CSK SCREW	SSS				
	500112	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
	500113	M10 CSK SCREW	SSS				
	500114	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW			
		SPECIFY THICKNESS		NOTE: CSK fixing	WITH Ra DISC g options require	e a thicker glass s	WITH Ra DISC election.

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Spider Fittings (Lightweight)



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Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
444/2/1 SPIDER	500115	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500116	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
	500117	M10 CSK SCREW	PSS				8 Residential
φ35	500118	M10 CSK SCREW WITH DISC	PSS				
42.8	500119	M8 CSK SCREW	SSS				
	500120	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS]
	500121	M10 CSK SCREW	SSS				3.8
	500122	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW	M10 Csk SCREW	M10 Csk SCREW
LL		SPECIFY THICKNESS		NOTE: CSK fixing	WITH Ra DISC	e a thicker glass s	WITH Ra DISC
443/4 SPIDER	500091	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
¢35	500092	M8CSKSCREW WITH DISC	PSS				Assemblies Commercial
120	500093	M10 CSK SCREW	PSS				8 Residential
	500094	M10 CSK SCREW WITH DISC	PSS				
	500095	M8 CSK SCREW	SSS				
	500096	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	·
	500097	M10 CSK SCREW	SSS				
	500098	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW	M10 Csk SCREW	M10 Csk SCREW
		SPECIFY THICKNESS		NOTE: CSK fixing		e a thicker glass s	
443/2 SPIDER	500075	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500076	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
120 ()	500077	M10 CSK SCREW	PSS				8 Residential
	500078	M10 CSK SCREW WITH DISC	PSS				
+ 40.8 +	500079	M8 CSK SCREW	SSS				
	500080	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
	500081	M10 CSK SCREW	SSS				
	500082	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW	M10 Csk SCREW	M10 Csk SCREW
25,8		SPECIFY THICKNESS		NOTE: CSK fixing		e a thicker glass s	





Spider Fittings (Lightweight and Heavy Duty)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
443/4/2 SPIDER	500099	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500100	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
	500101	M10 CSK SCREW	PSS				& Residential
	500102	M10 CSK SCREW WITH DISC	PSS				
¢35-	500103	M8 CSK SCREW	SSS				
	500104	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
	500105	M10 CSK SCREW	SSS				
	500106	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	1 معليك المعلم المع M8 Csk SCREW	M10 Csk SCREW	
		SPECIFY THICKNESS			WITH Ra DISC	re a thicker glass s	WITH Ra DISC
443/2/1 SPIDER	500083	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
, −, (Ø) −Ø35	500084	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
	500085	M10 CSK SCREW	PSS				8 Residential
¢30	500086	M10 CSK SCREW WITH DISC	PSS				
-40.8 ⁻	500087	M8 CSK SCREW	SSS				
	500088	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
	500089	M10 CSK SCREW	SSS				
- 15 - 25.8	500090	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW	M10 Csk SCREW	/10 Csk SCREW
		SPECIFY THICKNESS		NOTE: CSK fixin	WITH Ra DISC	e a thicker glass s	with Ra DISC
445/4M SPIDER	500155	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500156	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial
200	500646	SWIVEL 32/22-22n	PSS				8 Residential
	500157	SWIVEL 60/22-22n	PSS				
	500158	SWIVEL 60/22-42n (IGU)	PSS				
	500159	M10 CSK SCREW	SSS				
	500160	M10 CSK SCREW WITH B/H*	SSS				
	500645	SWIVEL 32/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	
65	500161	SWIVEL 60/22-22n	SSS				
	500162	SWIVEL 60/22-42n (IGU)	SSS				
↓ 57		SPECIFY THICKNESS		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		*B/H = BUTTON HEAD		NOTE: CSK fixing		e a thicker glass s	election.

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518 METRO

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Sizes mm

Finish

Spider Fittings (Heavy Duty)

Model

Product

445/2M SPIDER

445/4M/2 SPIDER

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500139	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
500140	M10 CSK SCREW WITH B/H*	PSS	0			Assemblies Commercial &
500648	SWIVEL 32/22-22n	PSS				Residential
500141	SWIVEL 60/22-22n	PSS				
500142	SWIVEL 60/22-42n (IGU)	PSS				
500143	M10 CSK SCREW	SSS				
500144	M10 CSK SCREW WITH B/H*	SSS				
500647	SWIVEL 32/22-22n	SSS				
500145	SWIVEL 60/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	_ س
500146	SWIVEL 60/22-42n (IGU)	SSS				
	SPECIFY THICKNESS *B/H = BUTTON HEAD		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	swivel 32/22-22n	SWIVEL 60/22-22n
500163	M10 CSK SCREW	PSS	316 STAINLESS	SPIDER	HEAVY DUTY SPIDER	Frameless
500164	M10 CSK SCREW WITH B/H*	PSS	STEEL		SFIDEN	Standoff Assemblies Commercial
500650	SWIVEL 32/22-22n	PSS				8 Residential
500165	SWIVEL 60/22-22n	PSS				
500166	SWIVEL 60/22-42n (IGU)	PSS				
500167	M10 CSK SCREW	SSS				
500168	M10 CSK SCREW WITH B/H*	SSS				
500649	SWIVEL 32/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	
500169	SWIVEL 60/22-22n	SSS			<pre>m</pre>	
500170	SWIVEL 60/22-42n (IGU)	SSS				
	SPECIFY THICKNESS *B/H = BUTTON HEAD		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	swivel 32/22-22n	SWIVEL 60/22-22n

Material

Area

Application

Type

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Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
445/2M/1 SPIDER	500147	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
- (500148	M10 CSK SCREW WITH B/H*	PSS	_			Assemblies Commercial &
φ40	500652	SWIVEL 32/22-22n	PSS				Residential
	500149	SWIVEL 60/22-22n	PSS				
	500150	SWIVEL 60/22-42n (IGU)	PSS				
ľ¶ -40+	500151	M10 CSK SCREW	SSS				
	500152	M10 CSK SCREW WITH B/H*	SSS				
	500651	SWIVEL 32/22-22n	SSS				
1-57	500153	SWIVEL 60/22-22n	SSS	GLASS FIXING OPTIONS		3 OPTIONS	
	500154	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		*B/H = BUTTON HEAD		NOTE: CSK fixing		a thicker glass s	election.
445/4M/2Y SPIDER	500171	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500654	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
Ø40	500658	SWIVEL 32/22-22n	PSS				Residential
90-90-050	500172	SWIVEL 60/22-22n	PSS				
	500173	SWIVEL 60/22-42n (IGU)	PSS				
45	500174	M10 CSK SCREW	SSS				
45 81	500653	M10 CSK SCREW WITH B/H*	SSS				
-15-	500657	SWIVEL 32/22-22n	SSS				
50	500175	SWIVEL 60/22-22n	SSS	FASTENER TYPES		3 OPTIONS	
	500176	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS *B/H =		FIXED M10 Csk SCREW	SWIVE / 26/20-1	™ ↓ EL S 5n 32	WIVEL /22-20n
		BUTTON HEAD		NOTE: CSK fixing	g options require	a thicker glass s	election.

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Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/4M SPIDER	500201	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50 200	500202	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
200	500660	SWIVEL 32/22-22n	PSS				Residential
	500203	SWIVEL 60/22-22n	PSS	_			
	500204	SWIVEL 60/22-42n (IGU)	PSS				
30 80 100 MIS THREADED	500205	M10 CSK SCREW	SSS				
	500206	M10 CSK SCREW WITH DISC	SSS				
100 105 STD STOCK LENGTH	500659	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	
68	500207	SWIVEL 60/22-22n	SSS				
	500208	SWIVEL 60/22-42n (IGU)	SSS	FIXED	FIXED M10 Csk SCREW	SWIVEL	SWIVEL 60/22-22n
		SPECIFY THICKNESS		NOTE: CSK fixin	Ra DISC	32/22-22n e a thicker glass s	S
446/2M SPIDER	500177	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50 100 100	500178	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
Ø35	500662	SWIVEL 32/22-22n	PSS				Residential
	500179	SWIVEL 60/22-22n	PSS				
30 040 68	500180	SWIVEL 60/22-42n (IGU)	PSS				
1	500181	M10 CSK SCREW	SSS				
	500182	M10 CSK SCREW WITH B/H*	SSS				
	500661	SWIVEL 32/22-22n	SSS				
	500183	SWIVEL 60/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	A _
	500184	SWIVEL 60/22-42n (IGU)	SSS	6.8	6.8		
		SPECIFY THICKNESS		FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		*B/H = BUTTON HEAD		NOTE: CSK fixi		re a thicker glass	selection.



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Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/4M/3 SPIDER	500217	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50 200	500218	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
Ø35 100	500667	SWIVEL 32/22-22n	PSS				Residential
100	500219	SWIVEL 60/22-22n	PSS				
Í.	500220	SWIVEL 60/22-42n (IGU)	PSS				
-30	500221	M10 CSK SCREW	SSS				
	500222	M10 CSK SCREW WITH DISC	SSS				
105 STDISTOCK LENGTH	500666	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	
68	500223	SWIVEL 60/22-22n	SSS				
	500224	SWIVEL 60/22-42n (IGU)	SSS	FIXED	FIXED	SWIVEL	SWIVEL
		SPECIFY THICKNESS		M10 Csk SCREW	M10 Csk SCREW Ra DISC	32/22-22n re a thicker glass	60/22-22n selection.
446/4M/2 SPIDER	500209	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500210	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
¢35	500669	SWIVEL 32/22-22n	PSS				Residential
200	500211	SWIVEL 60/22-22n	PSS				
	500212	SWIVEL 60/22-42n (IGU)	PSS				
	500213	M10 CSK SCREW	SSS				
30 -80-	500214	M10 CSK SCREW WITH DISC	SSS				
100	500668	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	(T)
100	500215	SWIVEL 60/22-22n	SSS				
-68-	500216	SWIVEL 60/22-42n (IGU)	SSS	FIXED	FIXED	SWIVEL	SWIVEL
		SPECIFY THICKNESS		M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	32/22-22n re a thicker glass	60/22-22n

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Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
446/2M/1 SPIDER	500185	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff	
φ50	500186	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &	
¢35	500671	SWIVEL 32/22-22n	PSS				Residential	
-M16 THREADED ROD	500187	SWIVEL 60/22-22n	PSS					
	500188	SWIVEL 60/22-42n (IGU)	PSS					
¢40	500189	M10 CSK SCREW	SSS					
	500190	M10 CSK SCREW WITH DISC	SSS					
	500670	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS		
	500191	SWIVEL 60/22-22n	SSS					
	500192	SWIVEL 60/22-42n (IGU)	SSS	FIXED	FIXED	SWIVEL	SWIVEL	
		SPECIFY THICKNESS		M10 Csk SCREW	M10 Csk SCREW Ra DISC	32/22-22n re a thicker glass	60/22-22n selection.	
446/4M/90 SPIDER	500225	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff	
	500226	M10 CSK SCREW WITH DISC	PSS			Ass	Assemblies Commercial &	
200	500674	SWIVEL 32/22-22n	PSS				Residential	
	500227	SWIVEL 60/22-22n	PSS					
	500228	SWIVEL 60/22-42n (IGU)	PSS					
30-80-	500229	M10 CSK SCREW	SSS					
	500230	M10 CSK SCREW WITH DISC	SSS					
100	500673	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	(Th)	
	500231	SWIVEL 60/22-22n	SSS					
	500232	SWIVEL 60/22-42n (IGU)	SSS	FIXED	FIXED	si s	SWIVEL	
		SPECIFY THICKNESS		NOTE: CSK fixin	FIXED M10 Csk SCREW Ra DISC	32/22-22n re a thicker glass	60/22-22n	



HARDWARE WARRANTY

Spider Fittings (Lightweight and Heavy Duty)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/2M/90 SPIDER	500193	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500194	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
	500676	SWIVEL 32/22-22n	PSS				Residential
	500195	SWIVEL 60/22-22n	PSS				
30 040	500196	SWIVEL 60/22-42n (IGU)	PSS				
	500197	M10 CSK SCREW	SSS				
	500198	M10 CSK SCREW WITH DISC	SSS				
	500675	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST		3 OPTIONS	
	500199	SWIVEL 60/22-22n	SSS	6.8	6.8		
-	500200	SWIVEL 60/22-42n (IGU)	SSS	FIXED	FIXED	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS		M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	a thicker glass s	Sec. 1. 2.
447/M16 /M10 STAND OFF	500677	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	STAND OFF SPIDER	Frameless Standoff
	500678	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial & Residential
	500233	M10 CSK SCREW	SSS	TYPICAL FIXING OPTIC	 DNS		
	500234	M10 CSK SCREW WITH DISC	SSS	, 4-99	25 h c		
		SPECIFY THICKNESS		M10 CSK SCREW	M10 CSK SCREW WITH RA DISC 60		60/22-42h SWIVEL
<i></i> ←¢35→				NOTE: CSK fixir		e a thicker glass s	election.
447/M16 /M14 STAND OFF	500679	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	STAND OFF SPIDER	Frameless Standoff
SPIDER	500680	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial & Residential
	500235	M10 CSK SCREW	SSS	TYPICAL FIXING OPTIC	DNS		
	500236	M10 CSK SCREW WITH DISC	SSS		<u>,</u>		
		SPECIFY THICKNESS		M10 CSK SCREW	MODE CER SCREW WITH RADISC 60		60/22-42n SWIVEL
⊷-¢35>				NOTE: CSK fixir		e a thicker glass s	election.

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Spider Fittings (Lightweight and Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
448/2/90 SPECIAL SPIDER	500682	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	SPECIAL SPIDER	Frameless Standoff
¢40	500684	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
	500690	SWIVEL 32/22-22n	PSS				Residential
	500686	SWIVEL 60/22-22n	PSS				
	500688	SWIVEL 60/22-42n (IGU)	PSS				
	500681	M10 CSK SCREW	SSS				
	500683	M10 CSK SCREW WITH DISC	SSS				
	500689	SWIVEL 32/22-22n	SSS	TYPICAL FIXING OPTIONS	6		
	500685	SWIVEL 60/22-22n	SSS			<u> </u>	
	500687	SWIVEL 60/22-42n (IGU)	SSS		SSCREW SADISC		60/22.420 SWIVE
		SPECIFY THICKNESS				a thicker glass s	election.
448/2 SPECIAL SPIDER	500691	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	SPECIAL SPIDER	Frameless Standoff
	500692	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
	500696	SWIVEL 32/22-22n	PSS				Residential
200	500693	SWIVEL 60/22-22n	PSS				
100 Ø35	500694	SWIVEL 60/22-42n (IGU)	PSS				
φ20	500239	M10 CSK SCREW	SSS				
Ę	500240	M10 CSK SCREW WITH DISC	SSS				
	500695	SWIVEL 32/22-22n	SSS	TYPICAL FIXING OPTIONS	5		
I A	500237	SWIVEL 60/22-22n	SSS	2 + 1 2 + 1 2 + 1	ь ф		
	500238	SWIVEL 60/22-42n (IGU)	SSS				
[]		SPECIFY THICKNESS		WITH F	RADISC	a thicker glass s	election.

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ARDWARE







Frameless Spider Commercial Facades (Assemblies)

Spider Fittings are the stainless steel hardware for mounting glass to walls, posts, fins, or other structural substrates. Typical Types of spider fittings can be divided into Fin Spider fittings and Point Fix Spider fittings.







Frameless Spider Commercial Facades (Assemblies)

PRODUCT OVERVIEW	530
AUSTVISION SPIDERFIN – STRUCTURAL GLASS SYSTEM	532
AUSTVISION SPIDERTRUSS – STRUCTURAL GLASS SYSTEM	538
AUSTVISION SPIDERFACADE – GLASS SYSTEM	542
AUSTVISION SPIDERFRAME – GLASS SYSTEM	556

PRODUCT OVERVIEW

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Frameless Spider Commercial Facades (Assemblies)

Ideal for creating an "all glass" look, Spider Fittings are designed for mounting to walls, posts, fins or other structural substrates with minimal visible connections. Holes must be drilled in the glass for assembly.

Metro Frameless Glass stock a range of Spider fittings. The fixing detail can be tailored for individual projects including side fixed, bottom fixed or top mounted fittings to meet the requirements of small canopies through to more complex glass walls.

All Spiders Fittings are manufactured from 316 stainless to maximise durability and appearance, in polished or satin finishes. Swivels are available for toughened, laminated or double glazed units, including flush fitting and surface mounted options.



Guidance Notes for Frameless Spider Commercial Facades

Glass walls overcome the restrictions of conventional frames to provide the ultimate all glass façade. They use proprietary mechanical fixings and toughened safety glass and combine strength and visible lightness to provide high performance window façade systems.

Glass is secured to a support structure by a variety of fitting options which are designed to meet the unique requirements of the project. These fixings absorb forces when the glass is under load and provide a secure connection between the glass component and support structure.

Types:

Ground Based Assemblies

Conventional toughened glass door entrance systems are the basic form of ground based assemblies, where the glass dead load is supported by the floor. They can be designed with or without doors and are normally a maximum of two tiers and 6 metres high, requiring lateral support from glass fins or a steel structure.

Fully Fixed Assemblies

For these systems the individual panels are normally fixed directly to the support structure, which can be steel, masonry or any other suitable structure. Normally the panes are fixed at the corners and the structure is designed to accommodate building movement at the perimeter.

Suspended Assemblies

The suspended assembly is the most versatile structural glass system and can be hung up to 20 metres in height. The adjustable suspension system in conjunction with perimeter channels permits the system to move independently of the building structure. This compensates for construction dimensional variations and overcomes problems associated with building movement, vibration and seismic loads. The glass façade is hung from the building structure like a curtain. The top tier panels are connected to the structure by adjustable hanger brackets and subsequent lower panels are connected by special fittings at their corners. The façade is located into channels at the perimeter and all glass joints and channels are sealed with silicone sealant. The hanging assembly is normally stabilised against wind load by glass fins located and fixed to the support structure with fixings at the joints.

Tension Rod Systems

The SpiderTruss tension rod façade system is designed with spider point fixed glass and high tension stainless steel rod in the form of vertical or horizontal trusses as wind bracing. The tension rod truss system utilises two pre-stressed catenaries that carry inward and outward wind loading. Loads are transferred from the glass through countersunk point fixings and spiders to the compression struts. The dead load of the glass is carried by suspension hangers to the top hung vertical tension rods connected to the spiders. The truss junctions consist of a combination of machined and cast stainless steel components. The trusses are tensioned between the concrete or steel structure and the systems pre-tension loading and sizing of the tension rods is determined from the thermal load, creep, seismic and wind loading conditions to the building.

Glass Fin Support

Typical glass fins can be fixed to metal mullions, trusses, space frames or other support structures for lateral support.

Glass Design

Glass wall design can be complex and depend on design loads, seismic movements, support structure and glass support method therefore specific design by our Technical Dept is required. 9



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Austvision SpiderFin – Structural Glass System

The Austvision SpiderFin Structural Glass System is a point fixed glass wall utilising glass structural support fins as wind bracing and can be a ground based, fully fixed or a suspended installation.

The SpiderFin System uses Austvision 445 series heavy duty spider fittings to transfer the loads from the glass fins to structure. When used with glass fins, the SpiderFin is a versatile system providing clean lines to a building's façade. The glass fins are normally used as a vertical mullion but can be used as horizontal transom and can also be used in overhead glazing applications.

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SAFELITE® EVA not suitable for splice plate assemblies shown in image above.

Key Features

- Suitable for 10mm to 25mm TSG and TLSG glass walls.
- Suitable for up to 19mm TSG in glass fins.
- Can be used with point fixed IGUs.
- ▶ Good corrosion resistance.

Types:

- ▶ The SpiderFin System has 2 fixing options;
- 444 series 4 way or 2 way light duty spider.
- ▶ 445 series 4 way or 2 way heavy duty spider.

Glass fixings can be countersunk, disc or swivel to suit the application and glass thickness, including options for IGUs.

Material and Finish

- All fittings are cast 316 marine grade stainless steel in satin or polished finish.
- All silicone joints are high or medium modulus black structural silicone.

The system is glazed with Metro Performance Glass, as follows:

- ▶ Toughened Safety Glass
- ▶ Toughened Heat Soak Glass
- ► Toughened Screen Print Glass

- ▶ Toughened Digital Print Glass
- ► SAFELITE[®] EVA or SAFELITE[®] STF (Sentry[®]) toughened laminated structural glass.

Compliance

The SpiderFin is specifically designed on a project to project basis depending on the design loads for the project.

Scope of Use

- Designed for the 'All-Glass' Look.
- Can be used on Residential and Commercial Projects Custom design and fabrication is available for specific projects.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz









Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
444/4 SPIDER	500123	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
¢35	500124	M8CSKSCREW WITH DISC	PSS				Assemblies Commercial &
120	500125	M10 CSK SCREW	PSS	_			Residential
└ <u></u> _@́_Ħ_`@	500126	M10 CSK SCREW WITH DISC	PSS				
	500127	M8 CSK SCREW	SSS				
	500128	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
48 63	500129	M10 CSK SCREW	SSS				3.8
- 42 -	500130	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW	M10 Csk SCREW	M10 Csk SCREW
		SPECIFY THICKNESS		NOTE: CSK fixing	wITH Ra DISC g options requir	e a thicker glass s	with Ra DISC selection.
444/4/2 SPIDER	500131	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
50	500132	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
Ø35 120	500133	M10 CSK SCREW	PSS				8 Residential
	500134	M10 CSK SCREW WITH DISC	PSS				
42.8	500135	M8 CSK SCREW	SSS				
	500136	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	·
	500137	M10 CSK SCREW	SSS				
	500138	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW WITH Ra DISC	M10 Csk SCREW	M10 Csk SCREW WITH Ra DISC
I.I. -42.8-		SPECIFY THICKNESS		NOTE: CSK fixing options require a thicker glass select			
444/2 SPIDER	500107	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500108	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
	500109	M10 CSK SCREW	PSS				8 Residential
	500110	M10 CSK SCREW WITH DISC	PSS				
-+ 30	500111	M8 CSK SCREW	SSS				
	500112	M8 CSK SCREW WITH DISC	SSS	STANDARD	1	3 OPTIONS	
	500113	M10 CSK SCREW	SSS				
- 42 ^{13]}	500114	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW	M10 Csk SCREW	M10 Csk SCREW WITH Ra DISC
		SPECIFY THICKNESS		NOTE: CSK fixing		e a thicker glass s	

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Spider Fittings (Lightweight and Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
444/2/1 SPIDER	500115	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500116	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
	500117	M10 CSK SCREW	PSS				8 Residential
\$	500118	M10 CSK SCREW WITH DISC	PSS				
42.8	500119	M8 CSK SCREW	SSS				
	500120	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
	500121	M10 CSK SCREW	SSS				
	500122	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW	M10 Csk SCREW	A10 Csk SCREW
LL		SPECIFY THICKNESS		NOTE: CSK fixin	WITH Ra DISC g options requir	e a thicker glass s	with Ra DISC selection.
445/4M SPIDER	500155	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500156	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
	500646	SWIVEL 32/22-22n	PSS				Residential
200	500157	SWIVEL 60/22-22n	PSS				
	500158	SWIVEL 60/22-42n (IGU)	PSS				
	500159	M10 CSK SCREW	SSS				
	500160	M10 CSK SCREW WITH B/H*	SSS				
65	500645	SWIVEL 32/22-22n	SSS				
	500161	SWIVEL 60/22-22n	SSS	GLASS FIXING OPTIONS		3 OPTIONS	·
	500162	SWIVEL 60/22-42n (IGU)	SSS				
لبا ۱ 57		SPECIFY THICKNESS *B/H = BUTTON HEAD		FIXED M10 Csk screw	FIXED BUTTON HEAD M10 Csk SCREW g options requir	SWIVEL 32/22-22n e a thicker glass s	SWIVEL 60/22-22n selection.

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Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
445/2M SPIDER	500139	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50 ¢40 _90	500140	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
	500648	SWIVEL 32/22-22n	PSS				Residential
	500141	SWIVEL 60/22-22n	PSS				
	500142	SWIVEL 60/22-42n (IGU)	PSS				
	500143	M10 CSK SCREW	SSS				
L 57-	500144	M10 CSK SCREW WITH B/H*	SSS				
	500647	SWIVEL 32/22-22n	SSS				
	500145	SWIVEL 60/22-22n	SSS	GLASS FIXING OPTIONS		3 OPTIONS	
	500146	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS *B/H =		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		BUTTON HEAD		NOTE: CSK fixin		e a thicker glass s	election.
445/4M/2 SPIDER	500163	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500164	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
200	500650	SWIVEL 32/22-22n	PSS				Residential
	500165	SWIVEL 60/22-22n	PSS				
	500166	SWIVEL 60/22-42n (IGU)	PSS				
	500167	M10 CSK SCREW	SSS				
	500168	M10 CSK SCREW WITH B/H*	SSS				
	500649	SWIVEL 32/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	I
65	500169	SWIVEL 60/22-22n	SSS				
	500170	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
L,I 57		*B/H = BUTTON HEAD		NOTE: CSK fixin		e a thicker glass s	election.

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Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
445/2M/1 SPIDER	500147	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500148	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial S
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	500652	SWIVEL 32/22-22n	PSS				Residential
	500149	SWIVEL 60/22-22n	PSS				
	500150	SWIVEL 60/22-42n (IGU)	PSS				
I[*]T −40−	500151	M10 CSK SCREW	SSS				
	500152	M10 CSK SCREW WITH B/H*	SSS				
	500651	SWIVEL 32/22-22n	SSS				
ці -57	500153	SWIVEL 60/22-22n	SSS			3 OPTIONS	
	500154	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS *B/H =		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		BUTTON HEAD		NOTE: CSK fixin		e a thicker glass s	election.
445/4M/2Y SPIDER	500171	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500654	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial 8
Ø40	500658	SWIVEL 32/22-22n	PSS				Residential
\$0_90_90_\$0	500172	SWIVEL 60/22-22n	PSS				
	500173	SWIVEL 60/22-42n (IGU)	PSS				
45	500174	M10 CSK SCREW	SSS				
45 81	500653	M10 CSK SCREW WITH B/H*	SSS				
-15-	500657	SWIVEL 32/22-22n	SSS				
l ~ 50 ~− l	500175	SWIVEL 60/22-22n	SSS	FASTENER TYPES		3 OPTIONS	
	500176	SWIVEL 60/22-42n (IGU)	SSS	6.8-1			
		SPECIFY THICKNESS *B/H = BUTTON HEAD		FIXED M10 Csk SCREW		EL S 15n 32	WIVEL 2/22-20n election.

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ARDWARE



Austvision SpiderTruss – Structural Glass System

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The Austvision Spider Truss is Tension a Truss System for glass walls. The tension trusses are used as vertical or horizontal supports for wind bracing large glass facades.

The SpiderTruss System utilises two pre-tensioned catenaries supporting inward and outward wind loading. Loads are transferred from the glass through Austvision spider fittings to the compression struts. The trusses are tensioned between the floor slab and the roof structure.

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Key Features

- ▶ Modern mechanical design with cast components.
- Suitable for 10mm to 19mm TSG.
- ▶ Suitable for 11.5mm to 22mm TLSG.
- Can be used with point fixed IGUs, up to maximum 42mm thick.
- ▶ Good corrosion resistance.
- ▶ High strength.

Types:

The SpiderTruss Systems can vary but are typically characterised by the number of connections at each end of the truss, and the number or spars to support the spider fittings, for example;

- ▶ V Truss Single connection 1 or more spars.
- ▶ X Truss double connection 1 or more spars.

Connection to the truss is via a Austvision 446 series heavy duty spider fitting, and glass fittings can be countersunk, disc or swivel to suit the application and glass thickness.

Material and Finish:

- A combination of machine and cast components are used with the SpiderTruss system.
- All spider fittings are cast 316 marine grade satin stainless steel, available in satin or polished finish.
- All tension rods are 2205 duplex grade stainless steel in satin finish.
- All fork ends and nodes junction are cast 329 grade hardened stainless steel in satin finish.

The system is glazed with Metro Performance Glass, as follows:

- ▶ Toughened Safety Glass
- ▶ Toughened Heat Soak Glass
- Toughened Screen Print Glass
- ▶ Toughened Digital Print Glass
- SAFELITE® EVA or SAFELITE® STF (Sentry®) toughened laminated structural glass.

Compliance

The SpiderTruss is specifically designed on a project to project basis depending on the design loads for the project.

Scope of Use

- Designed for the 'All-Glass' Look.
- Can be used on Residential and Commercial Projects Custom design and fabrication is available for specific projects.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz





Austvision Spidertruss – System Fittings



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
TENSION NODE	301475	TCN1	SSS	316 STAINLESS	SPIDER	CONNECTION	Frameless
(INLINE &	301476	TCN2	SSS	STEEL	TENSION NODE	TO SPIDER TIEROD / TIE	Structural walls and
OFFSET)	301477	TCN3	SSS		HODE	FORK	facades
		SPECIFY THICKNESS					

Austvision Spidertruss – Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area	
TIE FORK	300256	M12 Left Hand	SSS	316 STAINLESS	TIE FORK	CONNECTION	Frameless Structural walls and facades	
	300257	M12 Right Hand	SSS	STEEL		TO SPIDER TIEROD		
1º	300258	M14 Left Hand	SSS					
100	300259	M14 Right Hand	SSS					
	300261	M16 Left Hand	SSS					
	300262	M16 Right Hand	SSS					
	300263	M20 Left Hand	SSS					
	300264	M20 Right Hand	SSS					
	301660	M25 Left Hand	SSS					
	302174	M25 Right Hand	SSS					
		SPECIFY THICKNESS						
TIEROD	301660	Made to order	SSS	316 STAINLESS	TIEROD	TIEROD WITH	Fixing	
E Company and the Company of the Com				STEEL		FORKS	Component	

NOTE: Connection to the truss is via a Austvision 446 series heavy duty spider fitting, and glass fittings can be countersunk, disc or swivel to suit the application and glass thickness (See Frameless Glass Canopies Section pXXXX)







Austvision SpiderFacade – Glass System

The Austvision SpiderFaçade is a glass wall solution to overcome the restrictions of conventional frames and provide an ultimate all glass façade. The system utilises proprietary mechanical fixings and toughened safety glass and combine strength and visible lightness to provide high performance window façade systems.



Key Features

Ground Based Assemblies

- Conventional toughened glass door entrance systems are the basic form of ground based assemblies, where the glass dead load is supported by the floor. They can be designed with or without doors and are normally a maximum of two tiers and 6 metres high, requiring lateral support from glass fins or a steel structure.

Fully Fixed Assemblies

 For these systems the individual panels are normally fixed directly to the support structure, which can be steel, masonry or any other suitable structure. Normally the panes are fixed at the corners and the structure is designed to accommodate building movement at the perimeter.

Suspended Assemblies

- The suspended assembly is the most versatile structural glass system and can be hung up to 20 metres in height. The adjustable suspension system in conjunction with perimeter channels permits the system to move independently of the building structure. This compensates for construction dimensional variations and overcomes problems associated with building movement, vibration and seismic loads. The glass façade is hung from the building structure like a curtain. The top tier panels are connected to the structure by adjustable hanger brackets and subsequent lower panels are connected by special fittings at their corners. The façade is located into channels at the perimeter and all glass joints and channels are sealed with silicone sealant. The hanging assembly is normally stabilised against wind load by glass fins located and fixed to the support structure with fixings at the joints.

Types:

- 446 Series Heavy Duty for Structural glass walls and canopies
- 445 Series For Structural glass walls and canopies
- 444 Series For small entry glass walls, balustrades and canopies

- 443 Series For small entry glass walls, balustrades and canopies
- ▶ 450 Series Spiders For frameless glass Architectural Pivot Doors
- Swivel Fittings for spider or canopy connections for monolithic laminated and IGUs.
- All fittings are 316 stainless steel in satin or polished finish.

The system is glazed with Metro Performance Glass, as follows:

- Toughened Safety Glass
- Toughened Heat Soak Glass
- ▶ Toughened Screen Print Glass
- ▶ Toughened Digital Print Glass
- SAFELITE® EVA or SAFELITE® STF (Sentry®) toughened laminated structural glass

Compliance

The SpiderFacade system is specifically designed on a project to project basis depending on the design loads for the project.

Scope of Use

- Designed for the 'All-Glass' Look.
- Can be used on Residential and Commercial Projects Custom design and fabrication is available for specific projects.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



Spider Fittings (Lightweight)



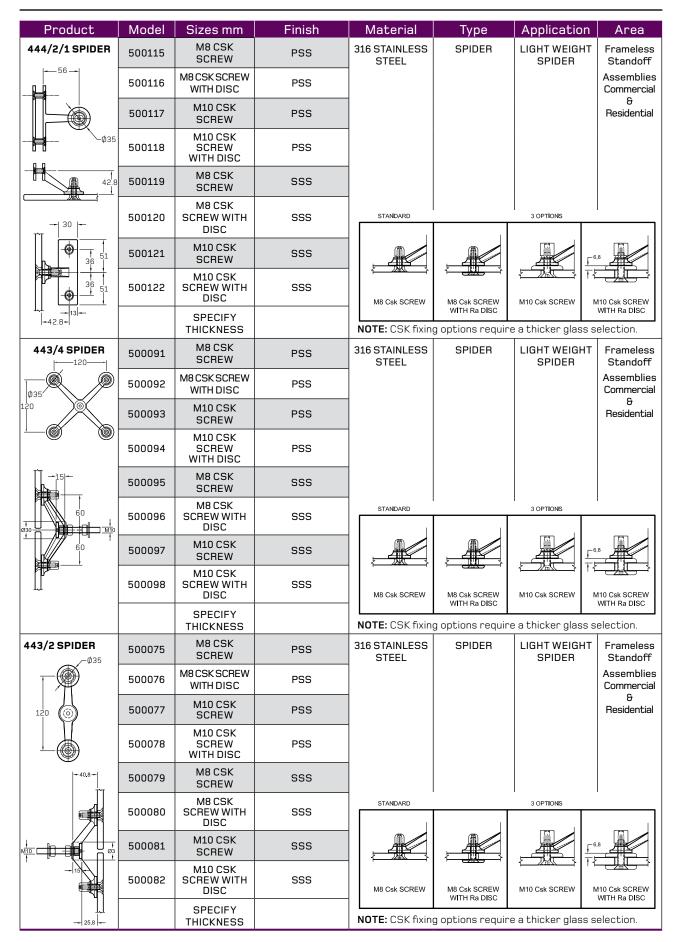
		0			-		
Product	Model	Sizes mm	Finish	Material	Туре	Application	
444/4 SPIDER	500123	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Standoff
Ø35	500124	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
120	500125	M10 CSK SCREW	PSS	_			Residential
└ <u></u> _@́_Ħ_`@	500126	M10 CSK SCREW WITH DISC	PSS				
	500127	M8 CSK SCREW	SSS				
	500128	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
	500129	M10 CSK SCREW	SSS				6.8
	500130	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW WITH Ra DISC	M10 Csk SCREW	M10 Csk SCREW
		SPECIFY THICKNESS		NOTE: CSK fixing		e a thicker glass :	
444/4/2 SPIDER	500131	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500132	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
Ø35 120	500133	M10 CSK SCREW	PSS				8 Residential
	500134	M10 CSK SCREW WITH DISC	PSS				
42.8	500135	M8 CSK SCREW	SSS				
	500136	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	·
	500137	M10 CSK SCREW	SSS				
	500138	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW WITH Ra DISC	M10 Csk SCREW	M10 Csk SCREW
142.8-1		SPECIFY THICKNESS		NOTE: CSK fixing		e a thicker glass :	
444/2 SPIDER	500107	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500108	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
	500109	M10 CSK SCREW	PSS				8 Residential
	500110	M10 CSK SCREW WITH DISC	PSS				
-+ 30 TT	500111	M8 CSK SCREW	SSS				
	500112	M8 CSK SCREW WITH DISC	SSS	STANDARD	1	3 OPTIONS	
	500113	M10 CSK SCREW	SSS				
	500114	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW WITH Ra DISC	M10 Csk SCREW	M10 Csk SCREW
		SPECIFY THICKNESS		NOTE: CSK fixing		e a thicker glass :	

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Spider Fittings (Lightweight)



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Spider Fittings (Lightweight and Heavy Duty)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
443/4/2 SPIDER	500099	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500100	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
	500101	M10 CSK SCREW	PSS				8 Residential
	500102	M10 CSK SCREW WITH DISC	PSS				
¢35-	500103	M8 CSK SCREW	SSS				
	500104	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
	500105	M10 CSK SCREW	SSS				
	500106	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW		110 Csk SCREW
		SPECIFY THICKNESS		NOTE: CSK fixing	WITH Ra DISC	e a thicker glass s	election.
443/2/1 SPIDER	500083	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
\$35 \$	500084	M8 CSK SCREW WITH DISC	PSS	SIEEL		SFIDER	Assemblies
	500085	M10 CSK SCREW	PSS				Commercial & Residential
¢30-	500086	M10 CSK SCREW WITH DISC	PSS				
-40.8 ⁻	500087	M8 CSK SCREW	SSS				
	500088	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	·
	500089	M10 CSK SCREW	SSS				
- 15 25.8	500090	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW		110 Csk SCREW
		SPECIFY THICKNESS		NOTE: CSK fixing	WITH Ra DISC	e a thicker glass s	election.
445/4M SPIDER	500155	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
φ40 ⁻⁹⁰ -φ50 ¹ / ₂₉ φ40 ²⁹	500156	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
200	500646	SWIVEL 32/22-22n	PSS				Residential
	500157	SWIVEL 60/22-22n	PSS				
	500158	SWIVEL 60/22-42n (IGU)	PSS				
	500159	M10 CSK SCREW	SSS				
	500160	M10 CSK SCREW WITH B/H*	SSS				
	500645	SWIVEL 32/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	
65	500161	SWIVEL 60/22-22n	SSS				
	500162	SWIVEL 60/22-42n (IGU)	SSS				
↓ 57		SPECIFY THICKNESS *B/H =		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		*B/H = BUTTON HEAD		NOTE: CSK fixing		e a thicker glass s	election.

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Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
445/2M SPIDER	500139	M10 CSK SCREW	PSS	316 STAINLESS	SPIDER	HEAVY DUTY	Frameless
φ50 φ40 -90 -90	500140	M10 CSK SCREW WITH B/H*	PSS	. STEEL		SPIDER	Standoff Assemblies Commercial &
	500648	SWIVEL 32/22-22n	PSS				Residential
	500141	SWIVEL 60/22-22n	PSS				
	500142	SWIVEL 60/22-42n (IGU)	PSS				
	500143	M10 CSK SCREW	SSS				
	500144	M10 CSK SCREW WITH B/H*	SSS				
	500647	SWIVEL 32/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	
	500145	SWIVEL 60/22-22n	SSS				
	500146	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS *B/H =		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		BUTTON HEAD		NOTE: CSK fixin	g options require	e a thicker glass s	election.
445/4M/2 SPIDER	500163	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500164	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
200	500650	SWIVEL 32/22-22n	PSS				Residential
	500165	SWIVEL 60/22-22n	PSS				
	500166	SWIVEL 60/22-42n (IGU)	PSS				
6.8 ^J	500167	M10 CSK SCREW	SSS				
	500168	M10 CSK SCREW WITH B/H*	SSS				
	500649	SWIVEL 32/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	I
65	500169	SWIVEL 60/22-22n	SSS		E /		
	500170	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
L-57		*B/H = BUTTON HEAD		NOTE: CSK fixing		e a thicker glass s	election.



HARDWARE WARRANTY

10 YEAR HARDWARE WARRANTY

Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
445/2M/1 SPIDER	500147	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500148	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
-@40	500652	SWIVEL 32/22-22n	PSS				Residential
	500149	SWIVEL 60/22-22n	PSS				
	500150	SWIVEL 60/22-42n (IGU)	PSS				
ľ¶ -40-1	500151	M10 CSK SCREW	SSS				
	500152	M10 CSK SCREW WITH B/H*	SSS				
	500651	SWIVEL 32/22-22n	SSS				
1-57	500153	SWIVEL 60/22-22n	SSS	GLASS FIXING OPTIONS		3 OPTIONS	
	500154	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS *B/H =		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		BUTTON HEAD		NOTE: CSK fixin	g options require	e a thicker glass s	election.
445/4M/2Y SPIDER	500171	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500654	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
Ø40	500658	SWIVEL 32/22-22n	PSS				Residential
90 90 ¢50	500172	SWIVEL 60/22-22n	PSS				
	500173	SWIVEL 60/22-42n (IGU)	PSS				
45	500174	M10 CSK SCREW	SSS				
	500653	M10 CSK SCREW WITH B/H*	SSS				
-15-	500657	SWIVEL 32/22-22n	SSS				
50	500175	SWIVEL 60/22-22n	SSS	FASTENER TYPES		3 OPTIONS	
	500176	SWIVEL 60/22-42n (IGU)	SSS	68			
		SPECIFY THICKNESS *B/H =		FIXED M10 Csk SCREW	SWIVE 26/20-1	EL S 5n 32	WIVEL /22-20n
		BUTTON HEAD		NOTE: CSK fixing	g options require	e a thicker glass s	election.



Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/4M SPIDER	500201	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50 200	500202	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
200	500660	SWIVEL 32/22-22n	PSS				Residential
	500203	SWIVEL 60/22-22n	PSS	_			
	500204	SWIVEL 60/22-42n (IGU)	PSS				
30 80 100 MI8 THREADED	500205	M10 CSK SCREW	SSS				
	500206	M10 CSK SCREW WITH DISC	SSS				
100 105 STD STOCK LENGTH	500659	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	I ANDARD	3 OPTIONS	1
68	500207	SWIVEL 60/22-22n	SSS				
	500208	SWIVEL 60/22-42n (IGU)	SSS	FIXED	EIVED	SWIVEL	SWIVEL
		SPECIFY THICKNESS		M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	22/22-22n	60/22-22n
446/2M SPIDER	500177	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50 100 100 ¢35	500178	M10 CSK SCREW WITH B/H*	PSS	SIEEL			Assemblies Commercial &
-MIS THREADED ROD	500662	SWIVEL 32/22-22n	PSS				Residential
80 III III	500179	SWIVEL 60/22-22n	PSS				
30 68	500180	SWIVEL 60/22-42n (IGU)	PSS				
	500181	M10 CSK SCREW	SSS				
	500182	M10 CSK SCREW WITH B/H*	SSS				
	500661	SWIVEL 32/22-22n	SSS				
	500183	SWIVEL 60/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	E .
	500184	SWIVEL 60/22-42n (IGU)	SSS	6.8			
		SPECIFY THICKNESS *B/H =		FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		BUTTON HEAD		NOTE: CSK fixir		re a thicker glass :	selection.



HARDWARE



Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/4M/3 SPIDER	500217	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
φ50 200	500218	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
Ø35 100	500667	SWIVEL 32/22-22n	PSS				Residential
100	500219	SWIVEL 60/22-22n	PSS				
ц.	500220	SWIVEL 60/22-42n (IGU)	PSS				
-30	500221	M10 CSK SCREW	SSS				
ThereAded Roo	500222	M10 CSK SCREW WITH DISC	SSS				
105 STDISTOCK LENGTH	500666	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	en a
-68	500223	SWIVEL 60/22-22n	SSS		6.8		
	500224	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED FIXED D Csk SCREW M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS				re a thicker glass	selection.
446/4M/2 SPIDER	500209	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
\$50	500210	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
¢35	500669	SWIVEL 32/22-22n	PSS				Residential
200	500211	SWIVEL 60/22-22n	PSS				
	500212	SWIVEL 60/22-42n (IGU)	PSS				
	500213	M10 CSK SCREW	SSS				
30 80	500214	M10 CSK SCREW WITH DISC	SSS	GLASS FASTENERS ST		3 OPTIONS	
	500668	SWIVEL 32/22-22n	SSS		E /		Ē,
	500215	SWIVEL 60/22-22n	SSS	6.8	6.8		
-68-	500216	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS		NOTE: CSK fixir	Ra DISC	re a thicker glass	selection.



Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/2M/1 SPIDER	500185	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
φ50	500186	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
¢35	500671	SWIVEL 32/22-22n	PSS				Residential
-MI6 THREADED ROD	500187	SWIVEL 60/22-22n	PSS				
	500188	SWIVEL 60/22-42n (IGU)	PSS				
¢40	500189	M10 CSK SCREW	SSS				
	500190	M10 CSK SCREW WITH DISC	SSS				
	500670	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	æ
	500191	SWIVEL 60/22-22n	SSS				
	500192	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS			M10 Csk SCREW Ra DISC	re a thicker glass	
446/4M/90 SPIDER	500225	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500226	M10 CSK SCREW WITH DISC	PSS	SIEEL			Assemblies Commercial &
200	500674	SWIVEL 32/22-22n	PSS				Residential
	500227	SWIVEL 60/22-22n	PSS				
	500228	SWIVEL 60/22-42n (IGU)	PSS				
30-80-	500229	M10 CSK SCREW	SSS				
	500230	M10 CSK SCREW WITH DISC	SSS	GLASS FASTENERS ST		3 OPTIONS	
100 STD STOCK LENGTH	500673	SWIVEL 32/22-22n	SSS				Ē
	500231	SWIVEL 60/22-22n	SSS	6.8	6.8		
	500232	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS				re a thicker glass	

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Spider Fittings (Lightweight and Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/2M/90 SPIDER	500193	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500194	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial S
	500676	SWIVEL 32/22-22n	PSS				Residential
	500195	SWIVEL 60/22-22n	PSS				
30 Ø40	500196	SWIVEL 60/22-42n (IGU)	PSS				
	500197	M10 CSK SCREW	SSS				
	500198	M10 CSK SCREW WITH DISC	SSS				
	500675	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	(E5)
	500199	SWIVEL 60/22-22n	SSS	6.8-1			
	500200	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS		NOTE: CSK fixir	Ra DISC ng options requir	e a thicker glass s	selection.



Austvision Spiderdoor System (Architectural Door Pivots)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
483 SPIDER TOP TRANSOM PIVOT	500478	CSK BUSH OPTION	SS	316 STAINLESS STEEL	SPIDER PIVOT	TOP OF TRANSOM	Internal & External
× ×	500479	35MM CSK DISC OPTION	SS			*Includes Stainless Steel Guide Pin	
		GLASS THICKNESS: 10-12mm	ON REQUEST: PSS				iL
452 SPIDER TOP DOOR PIVOT	500480	CSK BUSH OPTION	SS	316 STAINLESS STEEL	SPIDER PIVOT	TOP OF DOOR	Internal & External
	500481	35MM CSK DISC OPTION	SS	-			
		GLASS THICKNESS: 10-12mm	ON REQUEST: PSS				
451 SPIDER BOTTOM DOOR PIVOT	500482	CSK BUSH OPTION	SS	316 STAINLESS STEEL	SPIDER PIVOT *Fits to floor	BOTTOM OF DOOR	Internal & External
	500483	35MM CSK DISC OPTION	SS		spring closer		
		GLASS THICKNESS: 10-12mm	ON REQUEST: PSS				

FSS – Folding Stacking Spider – Top spider and bottom patch lock

BFS – Bi Folding Spider – Top spider hanger and patch lock

(STANDARD PATCH FITTINGS CAN ACCOMODIATE 10-12mm GLASS ONLY)



Austvision Spiderdoor Lock

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
456 BOTTOM	301069	LEFT HAND	SS	316 STAINLESS	LOCK	SPIDERDOOR	Internal &
PATCH LOCK	301070	RIGHT HAND	SS	STEEL		LOCK	External
	301071	LEFT HAND	SS				
	301072	RIGHT HAND	SS				
		GLASS THICKNESS: 10-12mm	ON REQUEST: PSS				iL
DOOR LOCK	300871	LOCK SHOOT	SS	ALUM	KEEPER	PIVOT DOOR	Internal &
KEEPER AG61			ON REQUEST: POWDERCOAT				



Austvision Spiderdoor System Individual Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SPIDER GUIDE PIN	301473	40x15mm	SS	316 STAINLESS STEEL	GUIDE PIN	REPLACEMENT PARTS	SPIDER DOOR COMPONENT
452 SPIDER TOP DOOR PIVOT	301126	42x55mm	SS	316 STAINLESS STEEL	SPIDER PIVOT	TOP OF DOOR	SPIDER DOOR
					*Individual Component		COMPONENT
451 SPIDER BOTTOM DOOR	301125	40x55mm	SS	316 STAINLESS STEEL	SPIDER PIVOT	BOTTOM OF DOOR	SPIDER DOOR
PIVOT				UTEE	*Individual Component *Fits to Floor Spring Closer	Doon	COMPONENT

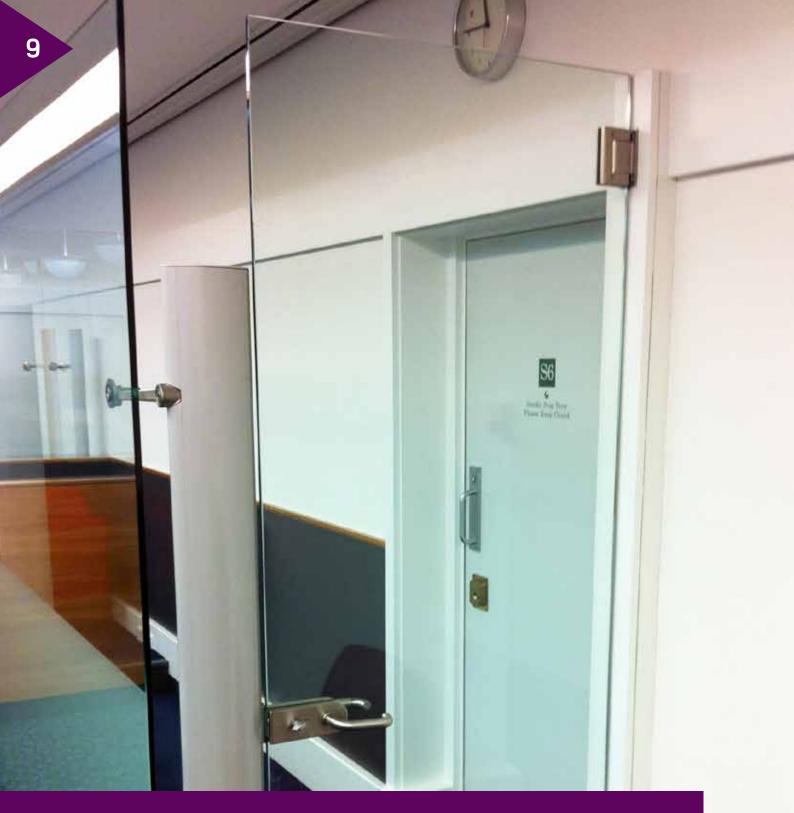
ADDITIONAL: HANDLE OR KNOB SELECTION REQUIRED

(Refer Handle selection table for additional options)

NOTE: Allowance must be made in the glass panel for cut out holes (Handle or Knob) as well as spider fitting







Austvision SpiderFrame – Glass System

The Austvision SpiderFrame System is a specially developed elliptical shaped aluminium extrusion and spider connection system for glass walls and screens, shopfront, display walls or canopies

The SpiderFrame uses simple techniques for connecting Toughened Safety Glass panels to the SpiderFrame, which can be used as a vertical post or horizontal transom or canopy supports.

The SpiderFrame can also be used cantilevered in short sections to replace glass fins or the like, and even for balustrade posts. It is connected to the structure with special profiled feet and can be reinforced with steel RHS inserts for high loadings over long spans.



Key Features

- Easy to measure and install.
- Can be stiffened for large spans.
- Adjustable.
- Suitable for 8mm toughened to 20mm toughened laminated glass.
- Can be used with point fixed IGUs
- Good corrosion resistance
- Appealing Profile design
- Range of fitting options

Types:

The SpiderFrame has 3 fixing options;

- AlphaLink 50/150 link connector.
- 443 series 4 or 2 light weight spider with a central M10 fixing.
- ▶ 446 series 4 or 2 way heavy duty spider with M16 fixing

Glass bolt connectors can be countersunk, disc or swivel to suit the application and glass thickness.

Material and Finish

The SpiderFrame is a 150 x 72mm elliptical aluminium extrusion which can be anodised or powder coated to suit including the profile clip on covers to conceal fixing slots. The extrusion lengths are 4.5m but can be joined. The fixing feet are stainless steel or mild steel along with the RHS stiffener. The spider fittings are cast 316 marine grade stainless steel and are available in satin and polished stainless finish.

The system is glazed with Metro Performance Glass, as follows:

- ▶ Toughened Safety Glass.
- ▶ Toughened Heat Soak Glass.
- ▶ Toughened Screen Print Glass.
- ▶ Toughened Digital Print Glass.
- SAFELITE[®] EVA or SAFELITE[®] STF (Sentry[®]) toughened laminated structural glass

Compliance

The SpiderFrame is specifically designed for each application as the post span and width modules are based on the design loads for the project.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz





Spider Fittings (Lightweight)

Product	Model	Sizes mm	Finish	Material	Туре	Application	n Area
443/4 SPIDER	500091	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGH SPIDER	T Frameless Standoff
¢35	500092	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
120	500093	M10 CSK SCREW	PSS				8 Residential
	500094	M10 CSK SCREW WITH DISC	PSS				
	500095	M8 CSK SCREW	SSS				
	500096	M8 CSK SCREW WITH DISC	SSS	STANDARD	, 	3 OPTIONS	
	500097	M10 CSK SCREW	SSS				
	500098	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW WITH Ra DISC	M10 Csk SCREW	M10 Csk SCREW WITH Ra DISC
		SPECIFY THICKNESS		NOTE: CSK fixin	g options requir	e a thicker glass	s selection.
443/2 SPIDER	500075	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGH SPIDER	T Frameless Standoff
	500076	M8 CSK SCREW WITH DISC	PSS				Assemblies Commercial
120 (500077	M10 CSK SCREW	PSS				8 Residential
	700078	M10 CSK SCREW WITH DISC	PSS				
- 40.8 -	500079	M8 CSK SCREW	SSS				
	500080	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	(FT)
	500081	M10 CSK SCREW	SSS				
	500082	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW WITH Ra DISC	M10 Csk SCREW	M10 Csk SCREW WITH Ra DISC
		SPECIFY THICKNESS		NOTE: CSK fixin	g options requir	e a thicker glass	s selection.

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Spider Fittings (Lightweight and Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
443/4/2 SPIDER	500099	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500100	M8 CSK SCREW WITH DISC	PSS			0	Assemblies
	500101	M10 CSK SCREW	PSS				8 Residential
	500102	M10 CSK SCREW WITH DISC	PSS				
	500103	M8 CSK SCREW	SSS				
Ø35-/	500104	M8 CSK SCREW WITH DISC	SSS	STANDARD		3 OPTIONS	
	500105	M10 CSK SCREW	SSS				6.8
	500106	M10 CSK SCREW WITH DISC	SSS				
		SPECIFY THICKNESS		M8 Csk SCREW	M8 Csk SCREW WITH Ra DISC	M10 Csk SCREW	M10 Csk SCREW WITH Ra DISC
				NOTE: CSK fixing	g options requir	e a thicker glass :	selection.
443/2/1 SPIDER	500083	M8 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	LIGHT WEIGHT SPIDER	Frameless Standoff
	500084	M8 CSK SCREW WITH DISC	PSS			0	Assemblies Commercial
	500085	M10 CSK SCREW	PSS				8 Residential
¢30-	500086	M10 CSK SCREW WITH DISC	PSS				
	500087	M8 CSK SCREW	SSS				
	500088	M8 CSK SCREW WITH DISC	SSS	STANDARD			
	500089	M10 CSK SCREW	SSS				
- 15 - - 25.8 -	500090	M10 CSK SCREW WITH DISC	SSS	M8 Csk SCREW	M8 Csk SCREW WITH Ra DISC	1 Csk SCREW	M10 Csk SCREW
		SPECIFY THICKNESS		NOTE: CSK fixing		e a thicker glass :	



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Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/4M SPIDER	500201	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50200	500202	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
Ø35	500660	SWIVEL 32/22-22n	PSS				Residential
	500203	SWIVEL 60/22-22n	PSS				
	500204	SWIVEL 60/22-42n (IGU)	PSS				
30 - 80 -	500205	M10 CSK SCREW	SSS				
100	500206	M10 CSK SCREW WITH DISC	SSS				
100	500659	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	(FD)
68	500207	SWIVEL 60/22-22n	SSS		6.8		
	500208	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS				e a thicker glass s	
446/2M SPIDER	500177	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50 100 100	500178	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
Ø35	500662	SWIVEL 32/22-22n	PSS				Residential
	500179	SWIVEL 60/22-22n	PSS				
30 68	500180	SWIVEL 60/22-42n (IGU)	PSS				
	500181	M10 CSK SCREW	SSS				
	500182	M10 CSK SCREW WITH B/H*	SSS				
	500661	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	I
	500183	SWIVEL 60/22-22n	SSS	A	ā	A	A
	500184	SWIVEL 60/22-42n (IGU)	SSS	6.8	6.8		
		SPECIFY THICKNESS		FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		*B/H = BUTTON HEAD		NOTE: CSK fixir	ng options requir	e a thicker glass s	selection.



Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/4M/3 SPIDER	500217	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50200	500218	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
¢35 100	500667	SWIVEL 32/22-22n	PSS				Residential
100	500219	SWIVEL 60/22-22n	PSS				
Ĩ.	500220	SWIVEL 60/22-42n (IGU)	PSS				
30 -80-	500221	M10 CSK SCREW	SSS				
	500222	M10 CSK SCREW WITH DISC	SSS				
105 STEISTOCK LENGTH	500666	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	E
68	500223	SWIVEL 60/22-22n	SSS	6.8	6.8		
	500224	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS		NOTE: CSK fixir		re a thicker glass s	selection.
446/4M/2 SPIDER	500209	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
100-050	500210	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial
¢35	500669	SWIVEL 32/22-22n	PSS				8 Residential
200	500211	SWIVEL 60/22-22n	PSS				
	500212	SWIVEL 60/22-42n (IGU)	PSS				
i. I	500213	M10 CSK SCREW	SSS				
30 -80-	500214	M10 CSK SCREW WITH DISC	SSS	GLASS FASTENERS ST		3 OPTIONS	
100	500668	SWIVEL 32/22-22n	SSS				Ē
100	500215	SWIVEL 60/22-22n	SSS	6.8	6.8		
	500216	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS				re a thicker glass s	

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Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/2M/1 SPIDER	500185	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
¢50	500186	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
¢35	500671	SWIVEL 32/22-22n	PSS				Residential
MI6 THREADED ROD	500187	SWIVEL 60/22-22n	PSS				
80 30 30 68	500188	SWIVEL 60/22-42n (IGU)	PSS				
Ø40	500189	M10 CSK SCREW	SSS				
	500190	M10 CSK SCREW WITH DISC	SSS				
	500670	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	Ē /
	500191	SWIVEL 60/22-22n	SSS	6.8	6.8		
	500192	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS		NOTE: CSK fixin		re a thicker glass	selection.
446/4M/90 SPIDER	500225	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500226	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial &
200	500674	SWIVEL 32/22-22n	PSS				Residential
	500227	SWIVEL 60/22-22n	PSS				
	500228	SWIVEL 60/22-42n (IGU)	PSS				
30 -80-	500229	M10 CSK SCREW	SSS				
	500230	M10 CSK SCREW WITH DISC	SSS				
100 STD.STOCK LENGTH	500673	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	A _
Sec.	500231	SWIVEL 60/22-22n	SSS	6.8	6.8		
	500232	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS				re a thicker glass	

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Spider Fittings (Lightweight and Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
446/2M/90 SPIDER	500193	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500194	M10 CSK SCREW WITH DISC	PSS				Assemblies Commercial 8
	500676	SWIVEL 32/22-22n	PSS				Residential
AND THREADED ROO	500195	SWIVEL 60/22-22n	PSS				
	500196	SWIVEL 60/22-42n (IGU)	PSS				
	500197	M10 CSK SCREW	SSS				
	500198	M10 CSK SCREW WITH DISC	SSS				
	500675	SWIVEL 32/22-22n	SSS	GLASS FASTENERS ST	ANDARD	3 OPTIONS	A .
	500199	SWIVEL 60/22-22n	SSS	6.8	6.8		Water Party Contraction of the second
	500200	SWIVEL 60/22-42n (IGU)	SSS	FIXED M10 Csk SCREW	FIXED M10 Csk SCREW Ra DISC	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		SPECIFY THICKNESS		NOTE: CSK fixin		e a thicker glass	selection.







Frameless Spider Glass Stairs and Floors

Sleek and modern, glass staircases and floors are a unique option for clients seeking an eye-catching contemporary look. Whether straight or curved, paired with wood or metal, our glass staircases offer limitless design options. Laminated structural glass stair treads and floors maximise light and spatial perception.







Frameless Spider Glass Stairs and Floors

PRODUCT OVERVIEW	568
AUSTVISION SPIDERTREAD – GLASS STAIR TREAD SYSTEM	570
AUSTVISION ALPHALINK – GLASS BALUSTRADE CONNECTOR	576



Frameless Spider Glass Stairs and Floors

For mechanically fixed Floors and Treads special stainless steel spider fittings can be used to support glass giving it a unique 'floating' appearance above the structure. As the design load and support details are critical these systems require specific design and our technical staff should be consulted. The special effects and durability of TEMPASCREEN® screen printed glass and TEMPAGRIP® slip resistant glass can be incorporated into any design in combination with the special fixing techniques to provide an attractive and functional installation.



Guidance Notes for Frameless Glass Stairs and Floors

Thick float glass was traditionally used in glass floors where the glass was lit beneath or "borrowed light" was allowed to pass down to a space below.

Laminated glass is more commonly used comprising two or more panes of thick glass and this provides a safer option in case of breakage. Laminated glass is not as strong as monolithic float glass and must therefore be thicker for the same design loads. Toughened glass is not used in monolithic form because of its breakage characteristics, but it can be used in the laminate as heat strengthened glass where special screen printed or slip resistant effects such as TEMPAGRIP® are required. Heat soaking is highly advisable for all toughened glass lites in laminated glass considered for any flooring application.

Slip Resistant Floor Treatment

In some situations floors and stair treads require slip resistance and TEMPAGRIP® can be combined with patterns to produce a stunning visual effect on the upper glass surface. Special non slip adhesive tapes and films can also be used.

Glazing

Edge cover should be at least the thickness of the glass and the supporting frame must be designed to support the design loads with minimal deflection. Four edge support is recommended and designs with 2 or 3 edge support require specific design by our technical department.

The glass edges should be flat ground and cushioned from the frame by Santoprene or similar hardness material load bearing glazing strips 6mm thick. Special high density foam tape can also be used.

The design edge clearance between the glass and the frame should be 6mm and allowance should be made for cutting and manufacturing tolerance.

A flush finish at the joints is normally achieved with a silicone or other suitable sealant and the sealant must be compatible with the laminated glass and glazing components.

General

Always avoid hard , sharp objects coming into contact with glass floors and particularly high concentrated loads from heavy furniture, castors or similar. Endeavour to eliminate the possibility of impact from hard falling objects.

Lighting to enclosed voids under floors and stairs should be ventilated to avoid excessive heat and thermal fracture. For special applications requiring higher loads or for load conditions from AS/NZS 1170.1 specific design is required by our technical team.

Glass Design Two Edge Support

It is possible to span glass between supports such as stringers or other frame supports but the glass thickness needs to be increased to support the design loads due to bending stress in the glass. The glass can be simply-supported using load bearing glazing strips and sealants as per the installation details for four edge support.

The glass thickness calculation is more complex and often toughened and heat strengthened glass are combined glass in special laminate construction. Specific design is required for these systems and our technical staff should be consulted.





The Austvision SpiderTread System utilises SAFELITE® EVA or SAFELITE® STF (Sentry®) Toughened Laminated Safety Glass (TLSG) combined with printed and non-slip surfaces to provide an attractive alternative to traditional stair treads.

The imposed floor actions are transferred from the glass through the Austvision spider fittings to the stair stringer. The laminated glass treads are fixed off the spider fitting using countersunk fixings which creates a flush surface.



Key Features

- ▶ Suitable for up to 40mm TLSG.
- ▶ Good corrosion resistance.
- Easy to install and replace.

Types:

- The SpiderTread System is supplied with the Austvision 445 series heavy duty spider fitting using M10 countersunk fixings.
- ▶ 445 series 4 way or 2 way heavy duty spider.

Material and Finish

All fittings are cast 316 marine grade stainless steel in satin and polished finish.

The system is glazed with Metro Performance Glass, as follows:

 SAFELITE[®] EVA or SAFELITE[®] STF (Sentry[®]) Toughened Laminated Safety Glass with or without TEMPAGRIP[®] non-slip glass surfaces.

Compliance

The SpiderTread System is specifically designed on a project basis subject to the imposed floor actions in AS/NZS 1170.1:2002.

Scope of Use

- Glass flooring provides an exciting combination of style and function, making a dramatic impression in both residential and commercial spaces.
- Structural glass floors, bridges, landings and stair treads can add light to lower level spaces and provide a unique design element to any interior.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



SPIDER GLASS STAIRS AND FLOORS

Spider Fittings (Heavy Duty)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
445/4M SPIDER	500155	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500156	M10 CSK SCREW WITH B/H*	PSS	_			Assemblies Commercial &
	500646	SWIVEL 32/22-22n	PSS				Residential
200	500157	SWIVEL 60/22-22n	PSS				
	500158	SWIVEL 60/22-42n (IGU)	PSS				
	500159	M10 CSK SCREW	SSS				
	500160	M10 CSK SCREW WITH B/H*	SSS				
	500645	SWIVEL 32/22-22n	SSS				
	500161	SWIVEL 60/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	
	500162	SWIVEL 60/22-42n (IGU)	SSS				
L] + 57		SPECIFY THICKNESS *B/H = BUTTON HEAD		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW g options require	swivel 32/22-22n e a thicker glass s	SWIVEL 60/22-22n election.
445/2M SPIDER	500139	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
JTL.	500140	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
¢50, 	500648	SWIVEL 32/22-22n	PSS				Residential
	500141	SWIVEL 60/22-22n	PSS				
	500142	SWIVEL 60/22-42n (IGU)	PSS				
	500143	M10 CSK SCREW	SSS				
	500144	M10 CSK SCREW WITH B/H*	SSS				
I57I	500647	SWIVEL 32/22-22n	SSS				
	500145	SWIVEL 60/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	 1
	500146	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS *B/H =		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		BUTTON HEAD		NOTE: CSK fixing	g options requir	e a thicker glass s	election.



SPIDER GLASS STAIRS AND FLOORS

Spider Fittings (Heavy Duty)



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Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
445/4M/2 SPIDER	500163	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500164	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial 8
200	500650	SWIVEL 32/22-22n	PSS				Residential
	500165	SWIVEL 60/22-22n	PSS				
	500166	SWIVEL 60/22-42n (IGU)	PSS				
6.8	500167	M10 CSK SCREW	SSS				
	500168	M10 CSK SCREW WITH B/H*	SSS				
	500649	SWIVEL 32/22-22n	SSS			3 OPTIONS	
65	500169	SWIVEL 60/22-22n	SSS	GLASS FIXING OPTION	S STANDARD	3 OPTIONS	
	500170	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS *B/H = BUTTON HEAD		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n Selection.
445/2M/1	500147	M10 CSK	PSS	316 STAINLESS	SPIDER	HEAVY DUTY	Frameless
SPIDER	500147	SCREW	F35	STEEL		SPIDER	Standoff Assemblies
- (, 050)	500148	M10 CSK SCREW WITH B/H*	PSS				Commercial & Residential
-\$\$ 90- -\$\$ -\$\$ -\$\$ -\$\$ -\$\$ -\$\$ -\$\$ -\$\$ -\$\$ -	500652	SWIVEL 32/22-22n	PSS				
	500149	SWIVEL 60/22-22n	PSS				
	500150	SWIVEL 60/22-42n (IGU)	PSS				
	500151	M10 CSK SCREW	SSS				
	500152	M10 CSK SCREW WITH B/H*	SSS				
I57I	500651	SWIVEL 32/22-22n	SSS				
	500153	SWIVEL 60/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	
	500154	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		*B/H = BUTTON HEAD		NOTE: CSK fixin		e a thicker glass s	election.

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SPIDER GLASS STAIRS AND FLOORS



Spider Fittings (Heavy Duty)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
445/4M/2Y SPIDER	500171	M10 CSK SCREW	PSS	316 STAINLESS STEEL	SPIDER	HEAVY DUTY SPIDER	Frameless Standoff
	500654	M10 CSK SCREW WITH B/H*	PSS				Assemblies Commercial &
200	500658	SWIVEL 32/22-22n	PSS				Residential
	500172	SWIVEL 60/22-22n	PSS				
	500173	SWIVEL 60/22-42n (IGU)	PSS				
	500174	M10 CSK SCREW	SSS				
	500653	M10 CSK SCREW WITH B/H*	SSS				
	500657	SWIVEL 32/22-22n	SSS	GLASS FIXING OPTIONS	STANDARD	3 OPTIONS	
65	500175	SWIVEL 60/22-22n	SSS				
	500176	SWIVEL 60/22-42n (IGU)	SSS				
		SPECIFY THICKNESS		FIXED M10 Csk SCREW	FIXED BUTTON HEAD M10 Csk SCREW	SWIVEL 32/22-22n	SWIVEL 60/22-22n
		*B/H = BUTTON HEAD		NOTE: CSK fixin		re a thicker glass s	selection.







Austvision AlphaLink – Glass Balustrade Connector

The Austvision AlphaLink is a profiled glass link connector designed primarily for balustrade infill panels, pool fences and internal glass screens connected to posts and balusters.

The AlphaLink uses a simple technique of connecting TEMPAFLOAT® Toughened Safety Glass, SAFELITE® EVA or SAFELITE® STF (Sentry®) Toughened Laminated Safety Glass panels to a post or frame by means of a slotted fixing and pre-located M10 bolt and tightening nut. This avoids the need for welding tabs to the post and makes measuring and installation easier. It can also be adjusted for angle to address inaccuracies on site for floor levels and stair rakes.

Key Features

- Easy to measure and install.
- Simple slotted fixing technique.
- Adjustable for stair rake.
- Suitable for 8mm toughened to 22mm laminated glass.
- Good corrosion resistance.
- Appealing "alpha" shape.
- Range of fitting options.

Types:

The AlphaLink is available with 2 fixing options;

- ▶ SD50/150 50mm stepped disc glass bolt connector.
- ▶ CS50/150 50mm countersunk disc glass bolt connector.

Material and Finish:

▶ The fittings are cast 316 marine grade stainless steel in satin and polished finish. Powdercoat options are available upon request.

The system is glazed with Metro Performance Glass, as follows:

- ▶ Toughened Safety Glass
- ▶ Toughened Heat Soak Glass
- ▶ Toughened Screen Print Glass
- ► Toughened Digital Print Glass
- SAFELITE[®] EVA or SAFELITE[®] STF (Sentry[®]) toughened laminated structural glass



Compliance

The AlphaLink can be used in conjunction with glass panels selected from the Balustrade Design Tables in NZS 4223 accordance with design loads selected from AS/NZS 1170, and applied in accordance with B1/VM1 or B1/AS1, depending on which table is used from NZS 4223.

Scope of Use

The Austvision AlphaLink is a profiled glass link connector designed primarily for balustrade infill panels, pool fences and internal glass screens connected to posts and balusters.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz 10



Austvision Alphalink-System Fittings

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ALPHALINK	501221	SD50/150	SSS	316 STAINLESS	SPIDER	CONNECTION	Frameless
	501223	CS50/150	SSS	STEEL		GLASS PANEL TO POST OR FRAME	Structural walls and facades
	501220	SD50/150	PSS				
	501222	CS50/150	PSS				
		150x50mm dia.					

NOTE: Please specify glass thickness when placing an order.

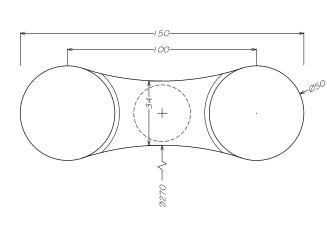


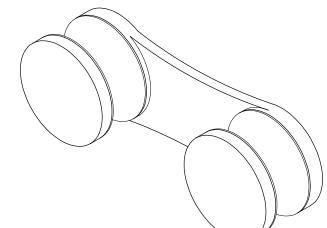
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SPIDER GLASS STAIRS AND FLOORS

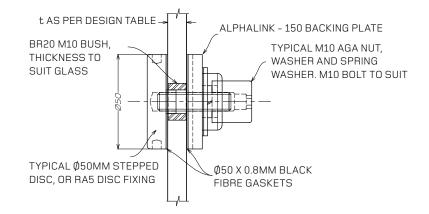
Austvision Alphalink – Typical Fixing Details

ALPHALINK -150 MAIN ELEVATION

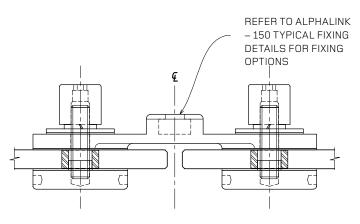




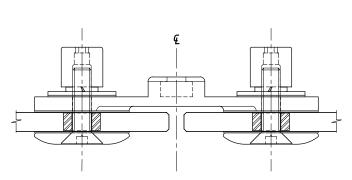
ALPHALINK -150 END ELEVATION



ALPHALINK -PLAN VIEW STEPPED DISC



ALPHALINK –PLAN VIEW RA50 DISC

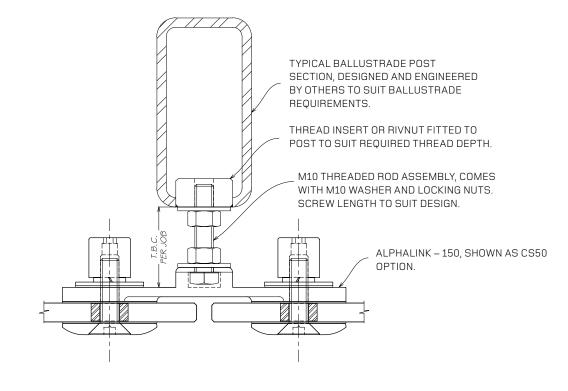




SPIDER GLASS STAIRS AND FLOORS Austvision Alphalink - Typical Fixing Details TYPICAL 10MM SS POST ADJUSTABLE ADP30 - A CONNECTOR. REFER TO ADP30 DETAILS FOR OTHER FIXING ARRANGEMENTS. ALPHALINK - 150, SHOWN AS CS50 OPTION.

ALPHALINK -M10 THREADED ROD FIXING OPTIONS

ALPHALINK -150 APO FIXING OPTION



100

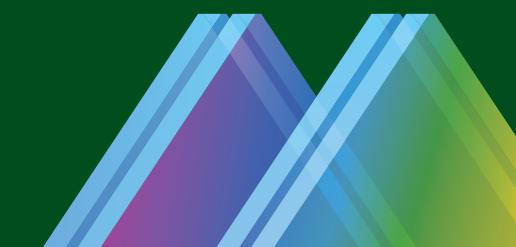






Glass Fixing Standoffs

Metro Frameless Glass manufacture a range of fittings for furniture, cabinets, splashbacks, signs, plaques and counters.

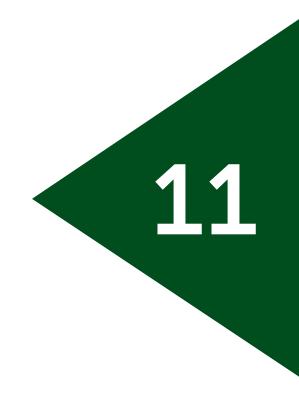






Glass Fixing Standoffs

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GLASS STANDOFF ANCHORS ORDER	586
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STANDOFF ANCHORS	602





PRODUCT OVERVIEW

Glass Fixing Standoffs

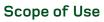
Frameless glass panels can require the use of standoff fittings. Metro Frameless Glass have a number of options available to suit a diverse range of requirements. Custom length glass standoffs are also possible and can be specified on request.

For Frameless Glass Balustrades please refer to the Section Balustrade Systems, Section 1.



Options Available:

Glass Fixings							
Uncovered Countersunk Bushes	Covered Countersunk Bushes						
M6 UCB6	CCB4 M4						
M8 UCB8	CCB6 M6						
M10 UCB10	CCB8						
M12 UCB12	CCB10 M10						

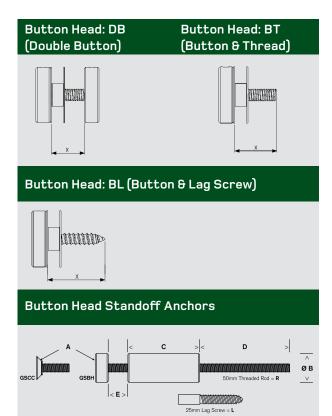


- ▶ Designed to secure frameless glass panels
- ▶ Securing the standoff fitting is typically by way of a stainless steel lag screw / threaded rod
- Crafted from durable stainless steel, these fasteners can be used indoors or outdoors for a range of applications to secure glass to a respective substrate.
- ▶ Ideal for furniture, cabinets, splash backs, signs, plaques and counters.

Support Inquiries

www.metroglass.co.nz

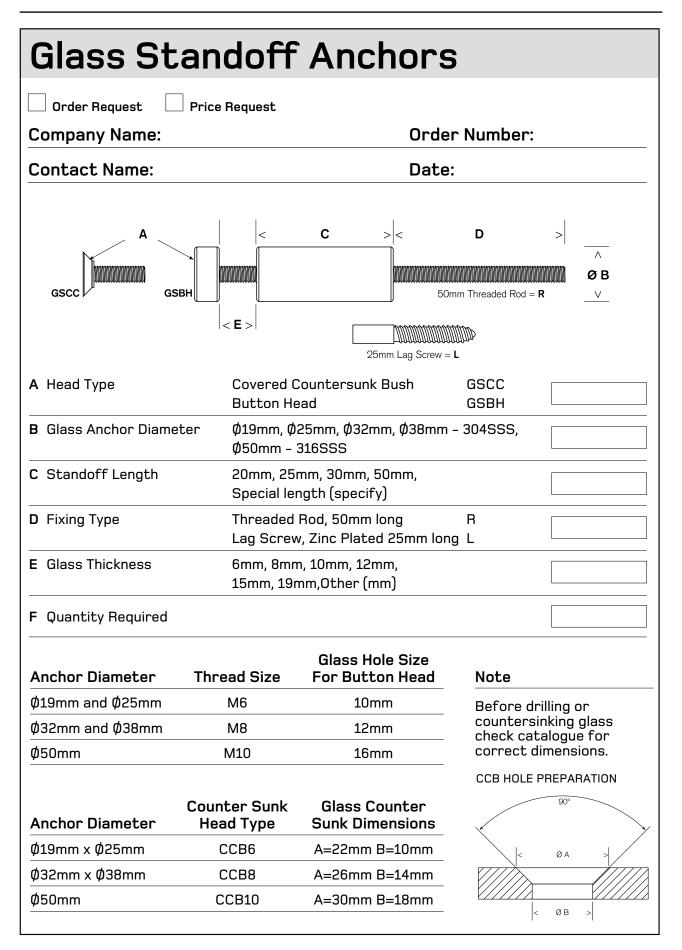
▶ Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz







HOW TO ORDER:







Uncovered Countersunk Bushes – Glass Fixings

Uncovered countersunk glass standoff fixing option from M6–M12 in stainless steel to suit numerous applications.



Key Features

Available in black or white as a standard finish coloured bush.

Material and Finish

- ▶ Stainless steel.
- ▶ Black and white finishes available for the bush.

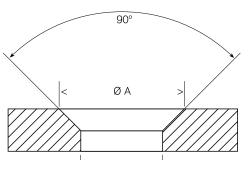
Glass

▶ Suits 8mm –15mm glass types.

Support Inquiries

 Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Hole Preparation







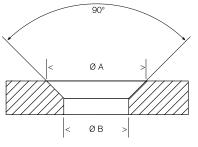


GLASS FIXING STANDOFFS Uncovered Countersunk Bushes



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area		
UNCOVERED CSK BUSH (UCB6)	301575	M6 Bush	BLACK	STAINLESS STEEL	BUSH ØA = 18mm	GLASS STANDOFF	Designed to secure		
	301577	M6 Bush	WHITE		$\phi R = 10 mm$ $\phi B = 10 mm$		frameless glass		
M6	500263	M6 x50mm Uncovered Bush with CSK Socket Screw	BLACK BUSH SS SCREW						panels
		GLASS THICKNESS: 8-15mm							
UCB6		ALL UNCOVERED							
UNCOVERED CSK BUSH (UCB8)	301578	M8 Bush	BLACK	STAINLESS	BUSH ØA = 20mm	GLASS STANDOFF	Designed to secure		
	301580	M8 Bush	WHITE		ΦA = 20mm ΦB = 12mm		frameless glass		
M8	500264	M8 x50mm Uncovered Bush with CSK Socket Screw	BLACK BUSH SS SCREW				panels		
		GLASS THICKNESS: 8-15mm							
UCB8		ALL UNCOVERED							
UNCOVERED CSK BUSH (UCB10)	301569	M10 Bush	BLACK	STAINLESS	BUSH ØA = 24mm	GLASS STANDOFF	Designed to secure		
	301571	M10 Bush	WHITE		$\phi R = 16$ mm		frameless glass		
M10	500265	M10 x50mm Uncovered Bush with CSK Socket Screw	BLACK BUSH SS SCREW				panels		
		GLASS THICKNESS: 8-15mm		-					
UCB10		ALL UNCOVERED							
UNCOVERED CSK BUSH (UCB12)	301572	M12 Bush	BLACK	STAINLESS	BUSH ØA = 28mm	GLASS STANDOFF	Designed to secure		
	301574	M12 Bush	WHITE		ΨΑ = 28mm ØΒ = 18mm		frameless glass		
M12	500266	M12 x50mm Uncovered Bush with CSK Socket Screw	BLACK BUSH SS SCREW				panels		
		GLASS THICKNESS: 8-15mm ALL							
UCB12		UNCOVERED							

Hole Preparation





GLASS FIXING STANDOFFS



Covered Countersunk Bushes – Glass Fixings

Covered countersunk glass standoff fixing option from M4–M10 in stainless steel to suit numerous applications.



Key Features

Available in 304 stainless steel.

Material and Finish

▶ Stainless steel.

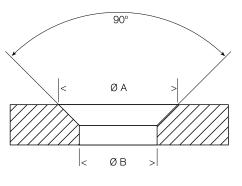
Glass

▶ Suits 6mm-15mm glass types.

Support Inquiries

 Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Hole Preparation







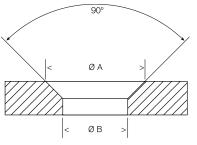


GLASS FIXING STANDOFFS Covered Countersunk Bushes



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
COVERED CSK BUSH (CCB4)	301860	M4 CSK Bush	SS	STAINLESS STEEL	BUSH	GLASS STANDOFF	Designed to secure
ССВ4	301861	M4 CSK Disc	SS	SIEEL	ØA = 16mm ØB = 7mm	STANDOFF	frameless
	4 M4 x25mm Covered Bush with CSK Socket or Timber Screw			glass panels			
		GLASS THICKNESS: 6mm					
		ALL COVERED					
COVERED CSK BUSH (CCB6)	301862	M6 CSK Bush	SS	STAINLESS STEEL	BUSH ØA = 22mm	GLASS STANDOFF	Designed to secure
ССВ6	301863	M6 CSK Disc	SS	STEEL	ψA = 22mm ØB = 10mm		frameless
	500268	M6 x50mm Covered Bush with CSK Socket or Timber Screw	SS				glass panels
		GLASS THICKNESS: 8-10mm ALL COVERED					
	301857	M8 CSK Bush	SS	STAINLESS	BUSH	GLASS STANDOFF	Designed to secure frameless
BUSH (CCB8)	301858	M8 CSK Disc	SS	STEEL	ØA = 26mm ØB = 14mm		
	500269	M8 x50mm Covered Bush with CSK Socket or Timber Screw	SS				glass panels
		GLASS THICKNESS: 8-12mm ALL COVERED					
COVERED CSK	301864	M10 CSK Bush	SS	STAINLESS	BUSH	GLASS	Designed
BUSH (CCB10)	301865	M10 CSK Disc	SS	STEEL	ØA = 30mm ØB = 18mm	STANDOFF	to secure frameless
M10	500270	M10 x50mm Covered Bush with CSK Socket or Timber Screw	SS		¢0 - 10mm		glass panels
		GLASS THICKNESS: 10-15mm ALL COVERED					

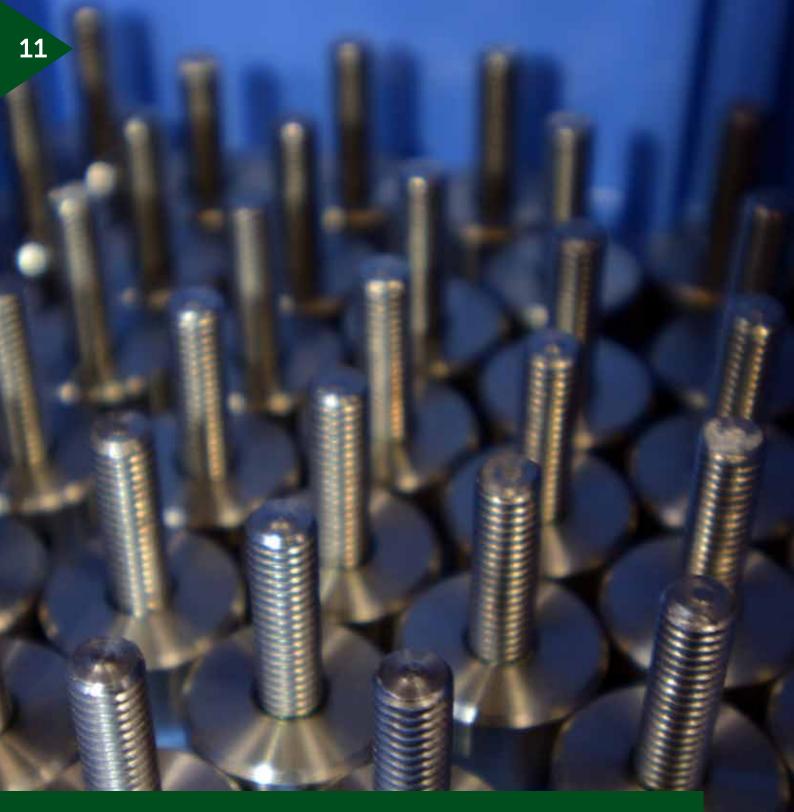
Hole Preparation





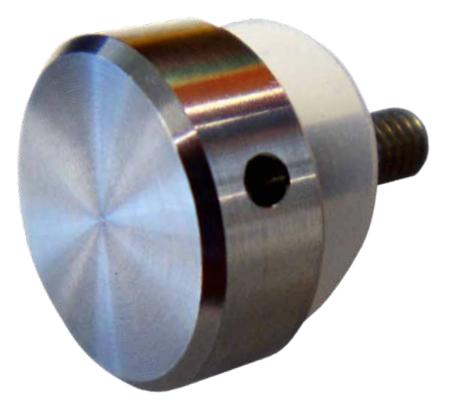






Standard Button Heads – Glass Fixings

Button head fixings have numerous applications Metro. Frameless Glass have a full range of button head fittings, with sizes from 19mm to the more heavy duty 50mm diameter buttons.



Key Features

- ▶ 19 50mm Diameter Button heads are available.
- ▶ All Buttons are 304 Stainless Steel Finish.

Material and Finish

► Stainless steel.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz



GLASS FIXING STANDOFFS Standard Button Heads



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
DOUBLE BUTTON	501028	M6 19mm Dia.*	SS	304 STAINLESS	DOUBLE	GLASS	Designed
HEADS	501030	M6 25mm Dia.*	SS	STEEL	BUTTON HEADS	STANDOFF	to secure frameless
	501031	M8 32mm Dia.*	SS		TIEADS	*All double buttons are supplied with	glass
	501033	M8 38mm Dia.*	SS			two nylon washers and sleeve.	panels
48048803	501034	M10 50mm Dia.*	SS			and sleeve.	
		Specify Thickness					
"X" equals tightened thread length between button heads.		*Specify X 'Length' for threaded rod between buttons when tightened.					
SINGLE BUTTON	300240	M6 19mm Dia.*	SS	304 STAINLESS	SINGLE	GLASS	Designed
HEADS / THREADED ROD	300241	M6 25mm Dia.*	SS	STEEL	BUTTON HEADS /	STANDOFF	to secure frameless
	300242	M8 32mm Dia.*	SS		THREADED	*All single buttons are supplied with	glass
	300243	M8 38mm Dia.*	SS		ROD	two nylon washers and sleeve.	panels
RUTTEROSPRAC	300244	M10 50mm Dia.*	SS				
		Specify Thickness					
		*Standard 18mm exposed threaded rod					
"X" equals length of rod.		*Specify X 'Length' for threaded rod between buttons when tightened.					
SINGLE BUTTON	500271	M6 19mm Dia.*	SS	304 STAINLESS	SINGLE	GLASS	Designed
HEADS / LAG SCREW	500272	M6 25mm Dia.*	SS	STEEL	BUTTON HEADS/LAG	STANDOFF	to secure frameless
	500273	M8 32mm Dia.*	SS		SCREW	*All single buttons are supplied with	glass
	500274	M8 38mm Dia.*	SS			two nylon washers and sleeve.	panels
	500275	M10 50mm Dia.*	SS				
		Specify Thickness					
× ×		*Specify X 'Length' for threaded					
"X" equals length of Lag Screw. Minimum length 25mm Maximum length 55mm. Note: 50mm diameter minimum length 50mm		rod between buttons when tightened.					

NOTE: For all Lag Screws and Threaded Rod Sizes Specified:
M6 Lag screw / threaded rod, Minimum Fixing Length =25mm
M8 Lag screw / threaded rod, Minimum Fixing Length =30mm
M10 Lag screw / threaded rod, Minimum Fixing Length =50mm





GLASS FIXING STANDOFFS

Fixing Components (Button Heads, Spacers, Nuts, Washers, Gaskets)

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
SINGLE BUTTON	300235	M6 19mm Dia.*	SSS	304 STAINLESS	BUTTON WITH	GLASS	Designed
HEADS	300236	M6 25mm Dia.*	SSS	STEEL	LDPE WASHER AND SLEEVE	STANDOFF COMPONENT	to secure frameless
(H)	300237	M8 32mm Dia.*	SSS	(M10 SUPPLIED	AND SLEEVE		glass
	301945	M10 32mm Dia.*	SSS	IN 316 STAINLESS		*All buttons are supplied with LDPE	panels
	300238	M8 38mm Dia.*	SSS	STEEL)		Washer and Sleeve.	
	300239	M10 50mm Dia.*	SSS	1			
		*M10 50mm diameter is supplied in 316 Stainless Steel					
SPACER WITH	5mm SPAC	ER:		304 STAINLESS	SPACER	GLASS	Designed to secure frameless glass
LDPE (OPAQUE) WASHER	301411	M6 19mm Dia 7mm Hole	SSS	STEEL	WITH LDPE (OPAQUE) WASHER	STANDOFF COMPONENT	
30	301414	M6 25mm Dia 7mm Hole	SSS	IN 316 STAINLESS	NOTE: FOR		panels
	301416	M8 32mm Dia 8.5mm Hole	SSS	STEEL)	INTERNAL USE ONLY		
	301418	M8 38mm Dia 8.5mm Hole	SSS				
	6mm SPAC	ER:		_			
	301420	M10 50mm Dia 10.5mm Hole	SSS	-			
	10mm SPA	CER:					
	301412	M6 19mm Dia 7mm Hole	SSS				
	301415	M6 25mm Dia 7mm Hole	SSS				
	301417	M8 32mm Dia 8.5mm Hole	SSS				
	301419	M8 38mm Dia 8.5mm Hole	SSS				
	20mm SPA	CER:		_			
	301413	M6 19mm Dia 7mm Hole	SSS				
	301421	M10 50mm Dia 10.5mm Hole	SSS				
	25mm SPA	CER:					
	301422	M10 50mm Dia 10.5mm Hole	SSS				
	30mm SPA	CER:					
	301423	M10 50mm Dia 10.5mm Hole	SSS				
		Specify Thickness					
LAG SCREWS	301299	M6 x 50mm	ZINC	ZINC PLATED &	LAG SCREW	FIXING	Designed
	301300	M8 x 50mm	ZINC	304 STAINLESS STEEL		COMPONENT	to secure frameless
A statement of the state of the	301297	M10 x 75mm	ZINC				glass
	301293	M10 x 100mm	ZINC	NOTE: ZINC LAG			panels
	301295	M10 x 120mm	ZINC	INTERNAL ONLY			
	301307	M8 x 80mm	SS				
	301292	M10 x 100mm	SS				

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FINISH WARRANTY



GLASS FIXING STANDOFFS

Fixing Components (Button Heads, Spacers, Nuts, Washers, Gaskets)



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
THREADED ROD	301528	M6 x 25mm	SS	304 STAINLESS	THREADED	FIXING	Designed
#13	301529	M6 x 32mm	SS	STEEL	ROD	COMPONENT	to secure frameless
	301530	M6 x 60mm	SS]			glass
	301533	M8 x 34mm	SS				panels
	301539	M8 x 60mm	SS				
	301505	M10 x 25mm	SS]			
	301512	M10 x 60mm	SS				
	301499	M10 x 100mm	SS				
	301501	M10 x 115mm	SS				
HEXNUTS	301038	M6	SS	304 STAINLESS STEEL	HEX NUTS	FIXING COMPONENT	Designed to secure
ats.	301042	M8	SS	-			frameless
	301025	M10*	SS	(M10 SUPPLIED IN 316			glass panels
				STAINLESS STEEL)			P
DOMENUTS	301037	M6	SS	304 STAINLESS STEEL	DOME NUTS	FIXING	Designed
(II)	301041	M8	SS			COMPONENT	to secure frameless
	301023	M10	SS				glass
							panels
SPRING	301611	M6	SS	304 STAINLESS STEEL (M10 SUPPLIED	SPRING WASHERS	FIXING	Designed
WASHERS	301614	M8	SS			COMPONENT	to secure frameless
C	301601	M10*	SS				glass panels
\bigcirc				IN 316 STAINLESS STEEL)			parieis
FLAT WASHERS	301609	M6 x 12.5 x 1mm	ZINC	304 STAINLESS STEEL	FLAT WASHERS	FIXING COMPONENT	Designed
0	301610	M6 x 25 x 1.6mm	ZINC	(M10 SUPPLIED	WASHERS	COMPONENT	to secure frameless glass
	301612	M8 x 16 x 1.2mm	ZINC	IN 316 STAINLESS			panels
	301613	M8 x 24 x 2mm	ZINC	STEEL)			
	301597	M10 x 21 x 2mm	ZINC				
	301583	M10 x 30 x 2mm	SS	_			
	301599	M10 x 50 x 3mm	SS				
LDPE GASKET	301590	M6x16x0.8mm	OPAQUE	LDPE	LDPE GASKET	FIXING	Designed
WASHERS (OPAQUE)	301591	M8x19x0.8mm	OPAQUE		WASHERS (OPAQUE)	COMPONENT	to secure frameless
_	301592	M8x23x0.8mm	OPAQUE		(glass
	301594	M8x31x0.8mm	OPAQUE				panels
	301595	M8x36x0.8mm	OPAQUE				
	301588	M10x50x 0.8mm	OPAQUE				

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600 METRO

GLASS FIXING STANDOFFS



Glass Fixing Clamps Components

Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
ADJUSTABLE GLASS CLAMP	300365	6-10mm glass	SSS	316 STAINLESS STEEL	PANEL CLAMP	STIFFENER PANEL CLAMP	Designed to secure
		GLASS THICKNESS: 6-10mm	ON REQUEST: POWDERCOAT				frameless glass panels
		30kg per clamp loading					
MOUNTING BACK	300045	50mm*	ANOD NATURAL	ALUM	RADIUS	FIXING	Designed
PLATE	300046	70mm*	ANOD NATURAL	-	MOUNTING BACK PLATE	COMPONENT	to secure frameless
		*Allows mounting to 50mm or 70mm diameter posts			SUITS COMPONENT 300365		glass panels
GLASS CLAMP	300366	8- 12mm glass	SSS	316 STAINLESS	PANEL CLAMP	STIFFENER	Designed
10		GLASS THICKNESS: 8-12mm	ON REQUEST: POWDERCOAT	STEEL		PANEL CLAMP *Supplied with gasket to suit	to secure frameless glass
0		35kg per clamp loading				8-12mm glass	panels
GLASS CLAMP – FOR POST	300367	8- 12mm glass	SSS	316 STAINLESS	PANEL CLAMP	STIFFENER	Designed
FURPOST		GLASS THICKNESS: 8-12mm	ON REQUEST: POWDERCOAT	STEEL		PANEL CLAMP	to secure frameless glass
0		35kg per clamp loading. Allows mounting to 50mm diameter post.					panels
SECURITY PIN	300364	21 dia. x 6mm	WHITE	PLASTIC	SECURITY PIN	FIXING	Designed
					SUITS COMPONENT 300366 300367	COMPONENT	to secure frameless glass panels
TIMBER CAP	300520	14Gx37mm	SS	316 STAINLESS	TIMBER	FIXING	Designed
SCREW	300521	14Gx50mm	SS	STEEL	THREAD CAP SCREW	COMPONENT	to secure frameless
Entration							glass panels
METAL CAP	300519	M8 x25mm	SS	316 STAINLESS	METAL	FIXING	Designed
SCREW				STEEL	THREAD CAP SCREW	COMPONENT	to secure frameless glass panels
METAL CAP	300522	M6 x25mm	SS	316 STAINLESS	METAL	FIXING	Designed
SCREW				STEEL	THREAD CAP SCREW	COMPONENT	to secure frameless
6					SUITS COMPONENT 300365		glass panels

NOTE: All glass fixing clamps are supplied with a selection of gaskets to suit glass thickness.



Standoff Anchors

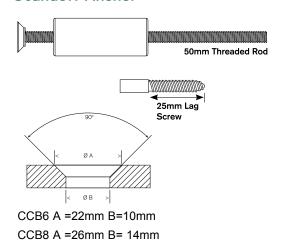
Metro Frameless Glass offers a range of Glass Standoff Anchors which includes threaded rods or lag screws.



Key Features

- Custom size standoff anchors are available on request
- Available in 304 stainless steel.
- Available with button head (Standoff 20mm, 25mm, 30mm or 50mm)
 19mm, 25mm 32mm, 38mm and 50mm diameter button head
- Available as a countersunk (Standoff 20mm, 25mm, 30mm or 50mm)
 19mm, 25mm, 32mm, 38mm and 50mm diameter button head

Typical Detail – Covered Countersunk Standoff Anchor



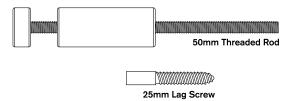
Material and Finish

Stainless steel.

Support Inquiries

Metro Technical phone (09) 927 3000 or email technical@metroglass.co.nz

Typical Detail – Button Head Standoff Anchor





GLASS FIXING STANDOFFS Button Head Standoff Anchors



BUTTON HEAD THREADED ROD 500449 M)D:					Area
			304 STAINLESS	BUTTON HEAD	GLASS	Designed
	16 19mm Dia x20mm	SS	STEEL	THREADED ROD	STANDOFF ANCHOR	to secure frameless
500276 ^M	/16 19mm Dia x25mm	SS			*Includes Threaded rod	glass panels
500450 M	l6 19mm Dia x30mm	SS			or Lag Screw, Button, Body and	
500277 ^N	vl6 19mm Dia x50mm	SS			Gaskets.	
500278 M	l6 25mm Dia x25mm	SS				
500729 ^N	/16 25mm Dia x50mm	SS				
500451 M	18 32mm Dia x20mm	SS				
500280 ^M	18 32mm Dia x25mm	SS				
500452 ^M	l8 32mm Dia x30mm	SS				
500281 ^M	/18 32mm Dia x50mm	SS				
500453 ^M	l8 38mm Dia x25mm	SS				
500454 ^M	/18 38mm Dia x50mm	SS				
500455 ^{M1}	10 50mm Dia x30mm	SS	316 STAINLESS STEEL			
500456 ^M	110 50mm Dia x50mm	SS	0			
BUTTON HEAD 501173 M	16 19mm Dia x20mm	SS	304 STAINLESS STEEL	BUTTON HEAD LAG SCREW	GLASS STANDOFF	Designed to secure frameless glass panels
501174 ^M	/16 19mm Dia x25mm	SS	LAG SCREW -	STANDOFF	ANCHOR	
501175 M	l6 19mm Dia x30mm	SS	ZINC PLATED		*Includes Threaded rod or Lag Screw, Button, Body and Gaskets.	
501176 ^N	vl6 19mm Dia x50mm	SS				
501177 M	l6 25mm Dia x25mm	SS				
501178 ^M	/16 25mm Dia x50mm	SS				
	18 32mm Dia x20mm	SS				
501180 M	18 32mm Dia x25mm	SS				
501181 M	l8 32mm Dia x30mm	SS				
501182 ^M	/18 32mm Dia x50mm	SS				
501183 ^{Mi}	18 38mm Dia x25mm	SS				
501184 ^M	/18 38mm Dia x50mm	SS				
501185 M1	10 50mm Dia x30mm	SS	316 STAINLESS STEEL			
501186 ^M	110 50mm Dia x50mm	SS	LAG SCREW -			
Т	SPECIFY THICKNESS		ZINC PLATED			



GLASS FIXING STANDOFFS Covered Counter Sunk Standoff Anchors



Product	Model	Sizes mm	Finish	Material	Туре	Application	Area
COVERED	THREADED	ROD:		304 STAINLESS	COVERED	GLASS	Designed
CSK BUSH THREADED ROD	501187	M6 19mm Dia x20mm	SS	STEEL	CSK BUSH THREADED	STANDOFF ANCHOR	to secure frameless
	501188	M6 19mm Dia x25mm	SS		ROD	*Includes Threaded rod	glass panels
	501189	M6 19mm Dia x30mm	SS			or Lag Screw, Button, Body and Gaskets.	
	501190	M6 19mm Dia x50mm	SS				
	501191	M6 25mm Dia x25mm	SS				
	501192	M6 25mm Dia x50mm	SS				
	501193	M8 32mm Dia x20mm	SS				
	501194	M8 32mm Dia x25mm	SS				
	501195	M8 32mm Dia x30mm	SS				
	501196	M8 32mm Dia x50mm	SS				
	501197	M8 38mm Dia x25mm	SS				
	501198	M8 38mm Dia x50mm	SS				
	501199	M10 50mm Dia x30mm	SS	316 STAINLESS STEEL			
	501200	M10 50mm Dia x50mm	SS				
COVERED CSK BUSH	501201	M6 19mm Dia x20mm	SS	304 STAINLESS STEEL	COVERED CSK BUSH	GLASS STANDOFF	Designed to secure frameless glass panels
AG SCREWS	501202	M6 19mm Dia x25mm	SS	LAG SCREW -	LAG SCREW STANDOFF	ANCHOR	
	501203	M6 19mm Dia x30mm	SS	ZINC PLATED		*Includes Threaded rod	
	501204	M6 19mm Dia x50mm	SS			or Lag Screw, Button, Body and Gaskets.	
	501205	M6 25mm Dia x25mm	SS				
	501206	M6 25mm Dia x50mm	SS				
	501207	M8 32mm Dia x20mm	SS				
	501208	M8 32mm Dia x25mm	SS				
Ş	501209	M8 32mm Dia x30mm	SS				
	501210	M8 32mm Dia x50mm	SS				
-	501211	M8 38mm Dia x25mm	SS				
	501212	M8 38mm Dia x50mm	SS				
	501213	M10 50mm Dia x30mm	SS	316 STAINLESS STEEL			
	501214	M10 50mm Dia x50mm	SS	LAG SCREW -			
		SPECIFY THICKNESS		ZINC PLATED			

NOTE: Custom Standoff Anchors are available on Request.







Glass Cut Outs

Many frameless glass hardware applications call for holes notches and cut-outs to be incorporated into the final design. In almost all circumstances, glass with holes, notches and cut-outs will need to be toughened. "Our custom processing allows us to create products that are bespoke to purpose".







Glass Cut Outs

PRODUCT OVERVIEW	610
GLASS ORDER SHEETS	614
 GLASS CUT OUTS Frameless Commercial Doors Frameless Showers Hardware Frameless Pool Fences, Gates and 	646 646 691 693
Wind Break Screens Spider Fittings 	699 706



Drilling Holes Refer to Diagram 1 below

- The hole diameter must be greater than or equal to the thickness of the glass with a minimum of 5mm.
- The distance from the edge of the hole to edge of the glass must be greater than or equal to 2 times the glass thickness. For glass 4 to 6mm thick, this hole distance can be reduced to 1.5 times the glass thickness.
- In a 90° corner the hole must be at least 4 times the glass thickness from one edge and at least 2 times the glass thickness from the other edge.
- In a corner that is over 90° the hole must be greater than or equal to 4 times the glass thickness from the corner and greater than or equal to 2 times the glass thickness from the other edges.
- In a corner that is less than 90° the hole must be greater than or equal to 4 times the glass thickness from the edge of the hole to the side edges and corner.
- The distance between holes must be greater than or equal to 4 times the glass thickness.
- Large hole diameters must be less than or equal to 1/3 of the pane width and height.
- In any pane with holes, the minimum width or height of the pane must be 8 times the glass thickness.

Bevelling

Bevelled glass can be toughened but there must be a residual edge on the glass of not less than 4mm.

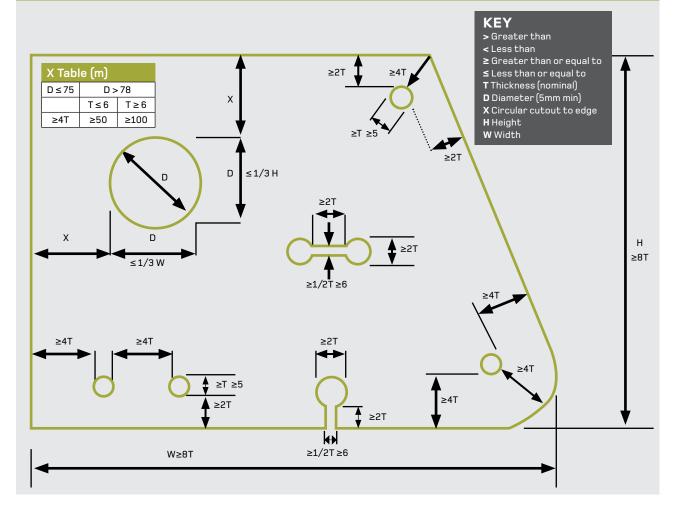
Edgework and Processing

All processing must be done before the glass is toughened. Any work attempted on toughened glass can cause shattering.

Edgework on Holes, Cutouts and Notches

- Holes will generally have a ground finish with a small arrissed edge.
- Countersunk holes are available in glass of 6 19mm thickness and are countersunk to 45°. The countersunk face will also be a ground finish.
- Cutouts and notches will normally have an arrissed finish to the edges.
- Cutouts and notches can have flat grind or flat polish edges but some limitations apply to the dimensions due to tooling required, normally R 15 to 20mm.

Processing Limitations – Holes Diagram 1





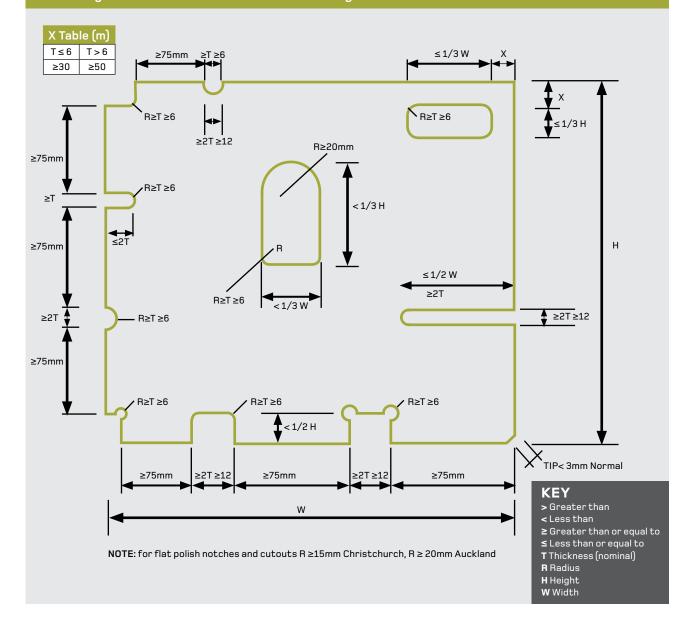
12

Cutouts and Notches Refer to Diagram 2 below

- The distance between a notch and the glass edge must be greater than or equal to 75mm.
- The height or width of a cutout must not be less than or equal to 1/3 of the pane height or width.
- The distance of the cutout to the glass edge must not be less than 30mm for glass up to 6mm, and 50mm for glass over 6mm.
- All rectangular cutouts must have radius corners with a minimum radius either greater than or equal to the glass thickness.
- All cutouts with semicircular ends must have a 20mm minimum radius and internal corners with a minimum radius greater than or equal to the glass thickness.

- All notches must have holes or radii corners greater than or equal to the glass thickness, and no less than 6mm.
- Half hole 'C' notches must have a radius greater than or equal to the glass thickness and a slot opening greater than or equal to the glass thickness.
- Radius end slots greater than 2 times the glass thickness must be greater than or equal to 2 times the glass thickness wide.
- Corners are normally tipped to remove sharp corners and this flat ground edge varies with thickness, normally up to 3mm. Large tipped corners are known as corner cut offs and may require additional edgework, such as polishing to match the edge.

Processing Limitations – Cutouts and Notches Diagram 2





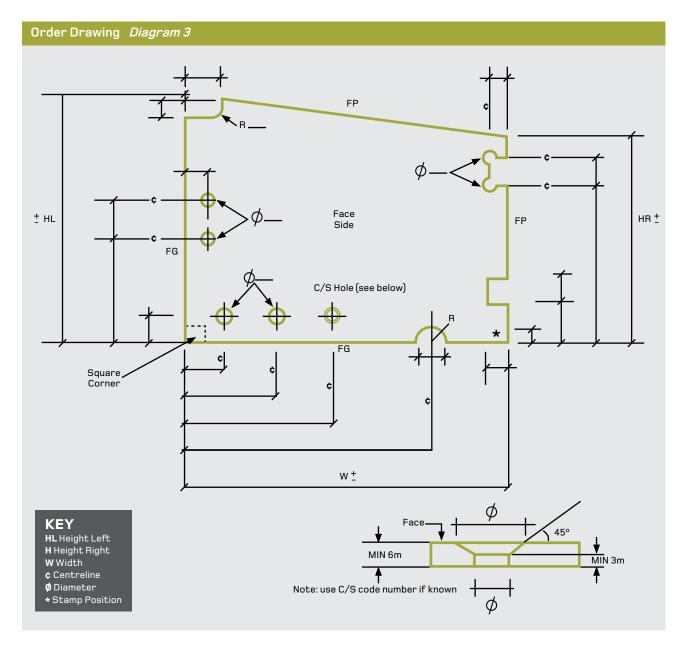
Order Drawings

Refer to Diagram 3 below for how to order glass requiring drawings and diagrams.

In order to avoid confusion, manufacturing delays or costly replacements,

glass drawings and diagrams should meet the following guidelines:

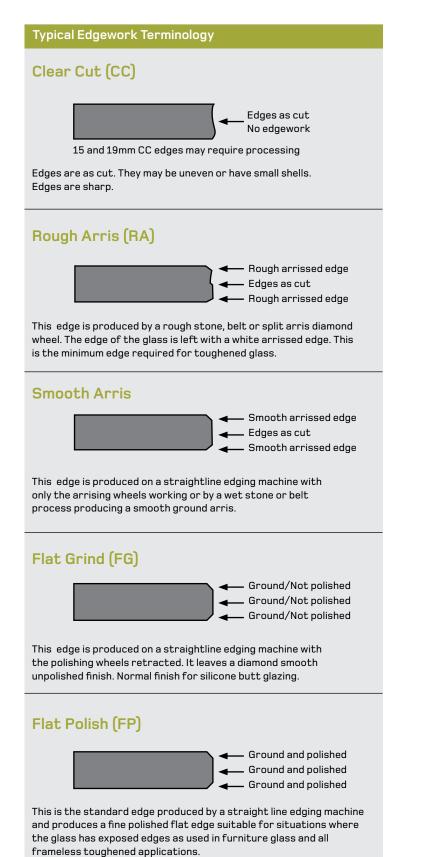
- Dimension outside the pane where possible.
- Size holes inside the pane.
- Use codes or diagrams for countersunk holes.
- Dimension from a square corner and mark on drawing.
- Dimension from one edge to avoid accumulative error.
- Dimension to centre lines of holes or circular cutouts.
- Dimension to edges of square cut outs.
- Dimension between holes for handles.
- Mark edgework type on the outer edges.
- Mark the face side on the drawing.
- Dimension to actual cut size corner if panes are raking.
- Mark on the stamp location with dimensions if critical.





Edge Working

Modern glass processing machinery provides a wide variety of edgework options. Maximum sizes vary depending on the machinery.





GLASS ORDER SHEETS INDEX

ABBREVIATIONS

FP	Flat Polished Edge
RA	Rough Arrised Edge

HEAVY WEIGHT GLASS ORDER SHEET INDEX

Section No.	Panel Description
1.22	Right Hung Door - for vertical handle
1.23	Left Hung Door - for vertical handle
1.24	Right Hung Door - for horizontal handle
1.25	Left Hung Door - for horizontal handle
1.26	Right Hung Door - for pull knob set
1.27	Left Hung Door - for pull knob set
1.28	Right Hung for MF2-90 Hinges
1.29	Plain Sidelight Panel
1.30	Right Sidelight - with polished backmitre
1.31	Left Sidelight - with polished backmitre
1.32	Right Sidelight Hinge Panel - with backmitre
1.33	Left Sidelight Hinge Panel - with backmitre
1.34	Sidelight - with two backmitres
1.35	Plain Right Return Panel
1.36	Plain Left Return Panel
1.37	Right Side Hinge Panel
1.38	Left Side Hinge Panel
1.39	Right Backmitred Return Hinge Panel
1.40	Left Backmitred Return Hinge Panel
1.41	Right Notched Side Panel
1.42	Left Notched Side Panel
1.43	Right Notched Return Hinge Panel
1.44	Left Notched Return Hinge Panel
1.45	Right Notched Return Hinge Panel - with backmitre
1.46	Left Notched Return Hinge Panel - with backmitre
1.47	Right Screen Panel - with radius corner
1.48	Left Screen Panel - with radius corner
1.49	Right Screen Panel - with raking back corner
1.50	Left Screen Panel - with raking back corner
1.51	Head Brace
1.52	Blank Special Panel Sheet





RIGHT HUNG DOOR FOR VERTICAL HANDLE 1.22 Hinge Types: MF1, MF1-L, MF2, MF2-135 Customer Name Order Number Date Ordered____/___/ __mm Clear Toughened Toughened Glass Stamp - marked 'X' 2 x 64mm x 44mm notches FP 2 x 12mm diameter holes Edges as marked 'FP' 64 Please fill in your dimensions (mm) **→**|44| Please list special ▶ 100 🖛 instructions below Ο 12mm FP Ο 44 FP Х FP

Metropolitan Glass Office	Delivery Date		
EDI No	_ Diagram Reference No: 1.22	//	



LEFT HUNG DOOR FOR VERTICAL HANDLE

Hinge Types: MF1, MF1–L, MF2, MF2–135

Customer Name
Date Ordered____/___/

_____mm Clear Toughened

Toughened Glass Stamp - marked 'X'

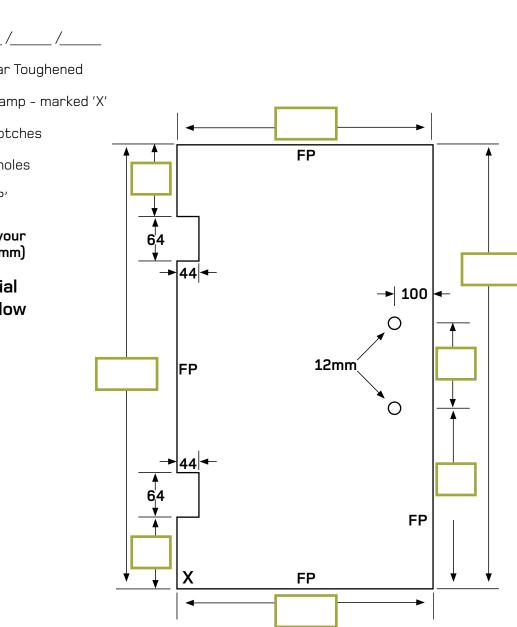
2 x 64mm x 44mm notches

2 x 12mm diameter holes

Edges as marked 'FP'

Please fill in your dimensions (mm)

Please list special instructions below



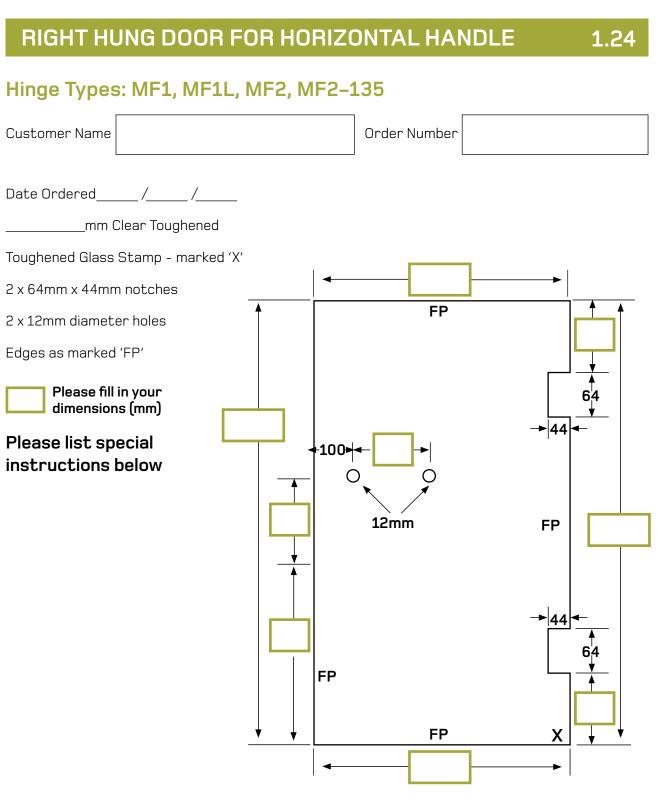
Order Number



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EDI No	Diagram Reference No: 1.24	//



LEFT HUNG DOOR FOR HORIZONTAL HANDLE

Hinge Types: MF1, MF1L, MF2, MF2–135

Customer Name
Date Ordered____/___/

_____mm Clear Toughened

Toughened Glass Stamp - marked 'X'

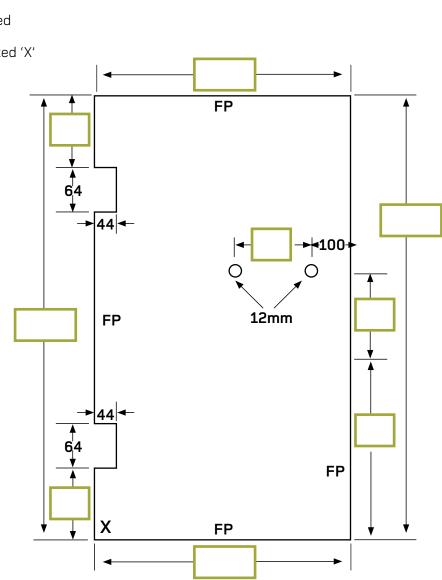
2 x 64mm x 44mm notches

2 x 12mm diameter holes

Edges as marked 'FP'

Please fill in your dimensions (mm)

Please list special instructions below



Order Number

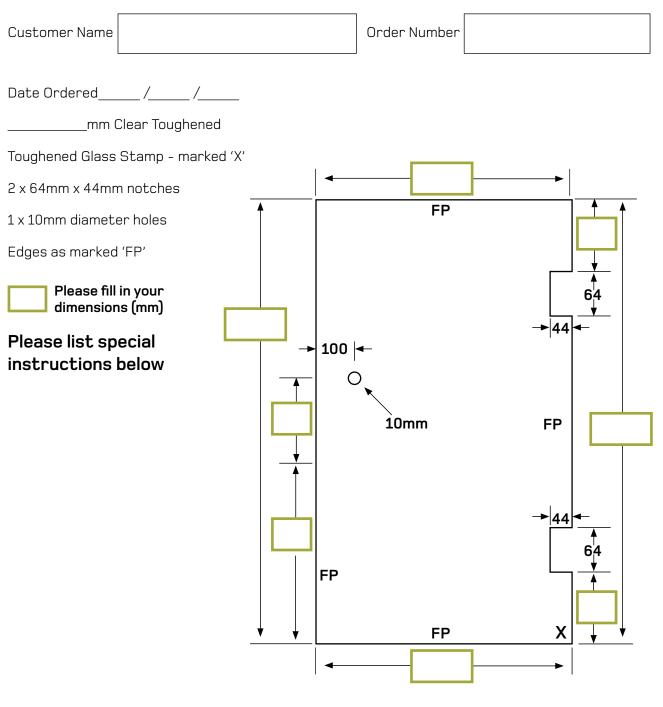
1.25

Metro Performance Glass Office Use Delivery Date EDI No. _____ Diagram Reference No: 1.25 ________



RIGHT HUNG DOOR FOR PULL KNOB SET

Hinge Types: MF1, MF1–L, MF2, MF2–135



Metro Performance Glass	Delivery Date	
EDI No	Diagram Reference No: 1.26	//

1.26



LEFT HUNG DOOR FOR PULL KNOB SET

Hinge Types: MF1, MF1-L, MF2, MF2-135

Customer Name

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GLASS CUT OUTS

_mm Clear Toughened

Toughened Glass Stamp - marked 'X'

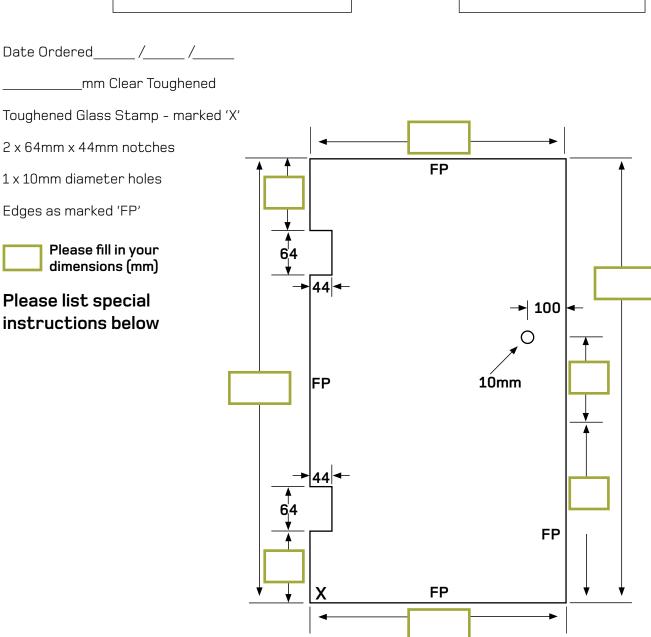
2 x 64mm x 44mm notches

1 x 10mm diameter holes

Edges as marked 'FP'

Please fill in your dimensions (mm)

Please list special instructions below

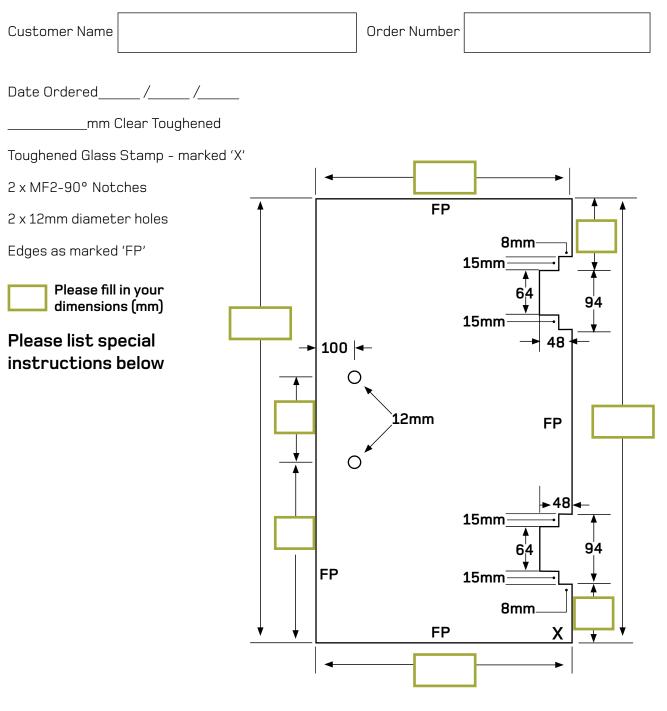


Order Number

Metro Performance Glass Office Use		Delivery Date
EDI No	Diagram Reference No: 1.27	//

RIGHT HUNG DOOR FOR MF2-90 HINGES

Hinge Type: MF2-90



Metro Performance Glass	Delivery Date	
EDI No	Diagram Reference No: 1.28	//



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12

PLAIN SIDELIGHT PANEL

Customer Name		C	order Number		
Date Ordered//	_				
Mark Toughened Glass Stamp posi	tion with 'X'				
Edges as marked 'FP'/'RA'		•		>	
Please list special instructions below Please fill in your dimensions (mm)		FP	FP	FP	
	Ļ		RA		V

Metro Performance Glass Office Use	Delivery Date	
EDI No Diagram Reference No: 1.29	//	





RIGHT SIDELIGHT WITH POLISHED BACK MITRE1.30

Customer Name		Order	Number		
Date Ordered//					
mm Clear Toughened					
degree polished backm	itre I			1	
Edges as marked 'FP'/'RA'		•		→	
Please list special instructions below	Î		FP		
Please fill in your dimensions (mm)		 			
		FP 		FP	
			RA	X	
		•		→	

Metro Performance Glass Office Use Delivery Date EDI No. Diagram Reference No: 1.30 _/__/___





LEFT SIDELIGHT WITH POLISHED BACK MITRE 1.31 Customer Name Order Number Date Ordered_____/___/____ _mm Clear Toughened degree polished backmitre Edges as marked 'FP'/'RA' FP Please list special instructions below Please fill in your dimensions (mm) FP | FP RA Х



RIGHT SIDELIGHT HINGE PANEL WITH BACKMITRE 1.32

Hinge Type: MF2

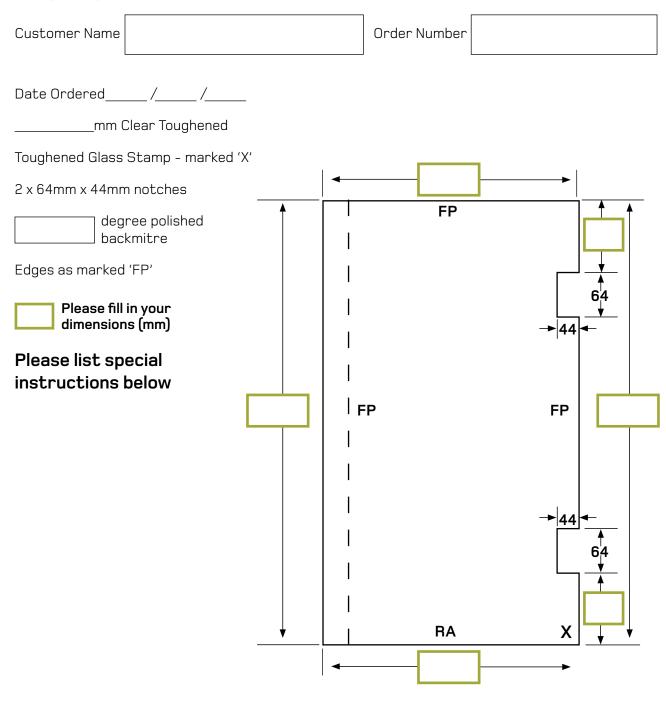
Customer Name		Order Number		
Date Ordered//				
mm Clear Toughened				
Toughened Glass Stamp - marked 'X'				
2 x 64mm x 44mm notches				
degree polished backmitre		FP		≜
Edges as marked 'FP'				
Please fill in your dimensions (mm)	64 _▼44 < _		I	
Please list special			' 	
instructions below				
	FP		FP	
		RA		

Metro Performance Glass	Delivery Date	
EDI No	Diagram Reference No: 1.32	//



LEFT SIDELIGHT HINGE PANEL WITH BACKMITRE 1.33

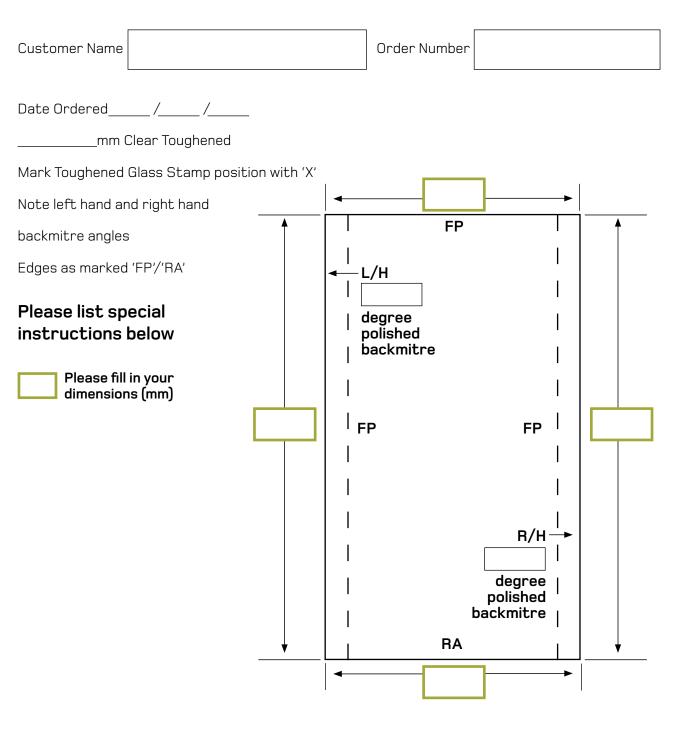
Hinge Types: MF2



Metro Performance Glass Office Use		Delivery Date
EDI No	Diagram Reference No: 1.33	//



SIDELIGHT WITH TWO BACKMITRES



Metro Performance Glass	Delivery Date	
EDI No	Diagram Reference No: 1.34	//

1.34

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PLAIN RIGHT RETURN PANEL

Customer Name Order Number Date Ordered____/___/ __mm Clear Toughened Toughened Glass Stamp - marked 'X' Edges as marked 'FP'/'RA' FP **Please list special** instructions below Please fill in your dimensions (mm) FP RA RA Х

 Metro Performance Glass Office Use
 Delivery Date

 EDI No. _____ Diagram Reference No: 1.35
 __/____



PLAIN LEFT RETURN PANEL

Customer Name			Order Number		
Date Ordered//	-				
mm Clear Toughened					
Toughened Glass Stamp - marked '>	X'	1			
Edges as marked 'FP'/'RA'					
Please list special instructions below			FP		
Please fill in your dimensions (mm)					
		RA		FP	
	Ļ		RA	x	↓

Metro Performance Glass Office Use		Delivery Date
EDI No	_ Diagram Reference No: 1.36	//



1.36

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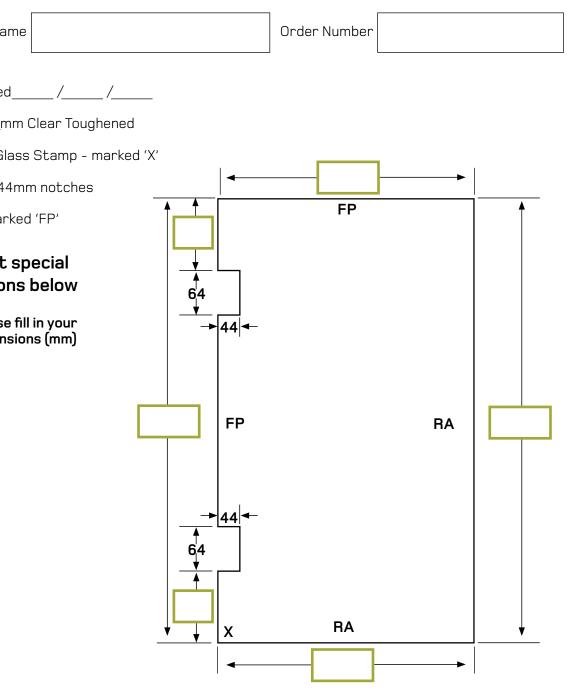


Hinge Type: MF2 Customer Name Date Ordered____/___/ _mm Clear Toughened Toughened Glass Stamp - marked 'X' 2 x 64mm x 44mm notches Edges as marked 'FP' **Please list special** instructions below Please fill in your dimensions (mm)

Metro Performance Glass Office Use **Delivery Date** _/____/_ Diagram Reference No: 1.37 EDI No. _

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RIGHT SIDE HINGE PANEL

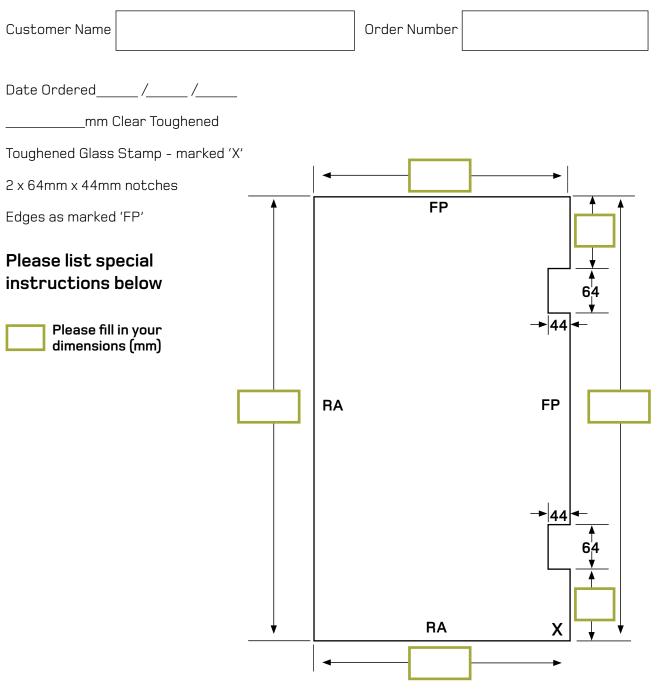


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LEFT SIDE HINGE PANEL

Hinge Types: MF2



Metro Performance Glass	Delivery Date	
EDI No	Diagram Reference No: 1.38	//

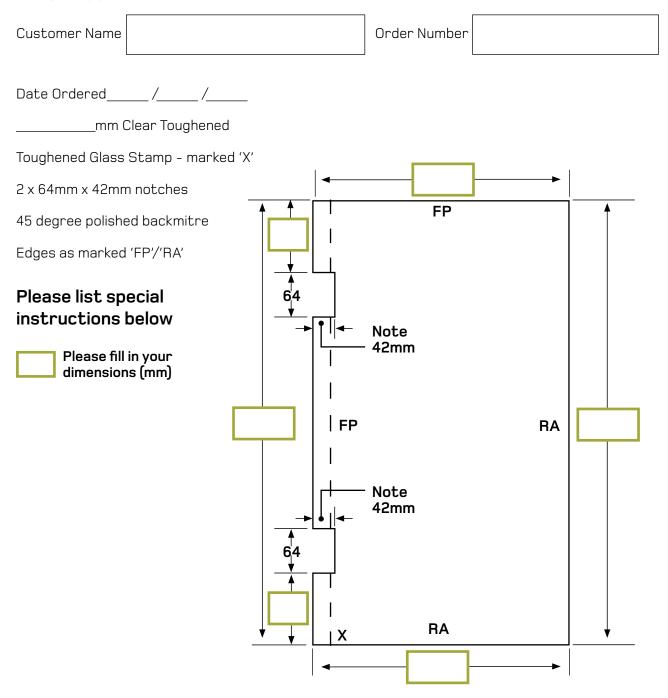
1.38

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RIGHT BACKMITRED RETURN HINGE PANEL

Hinge Type: MF2-135



Metro Performance Glass Office Use		Delivery Date
EDI No	Diagram Reference No: 1.39	//

12



LEFT BACKMITRED RETURN HINGE PANEL 1.40 Hinge Type: MF2-135 Customer Name Order Number Date Ordered____/___/ _mm Clear Toughened Toughened Glass Stamp - marked 'X' 2 x 64mm x 42mm notches FP 45 degree polished backmitre Edges as marked 'FP'/'RA' **Please list special** 64 instructions below Please fill in your Note dimensions (mm) 42mm FP RA Note 42mm RA Х

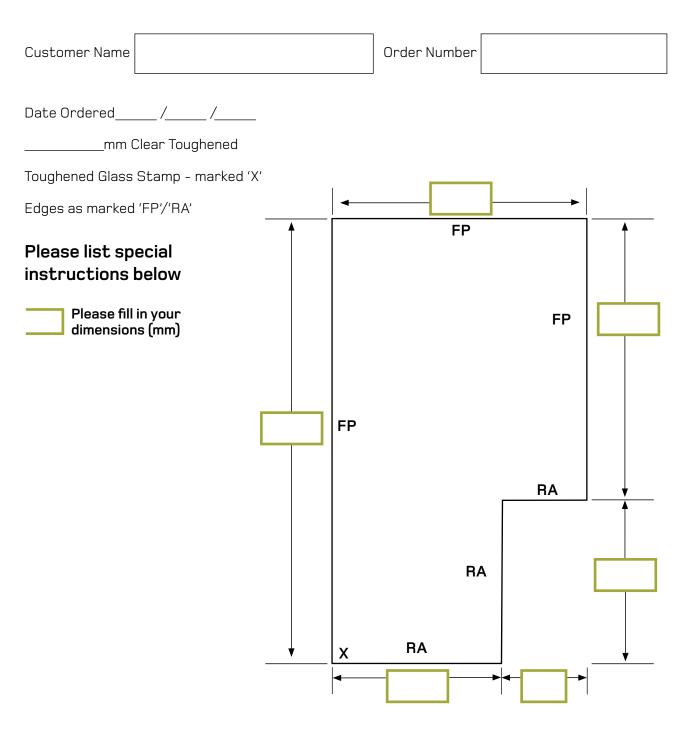
Metro Performance Glass	Delivery Date	
EDI No	Diagram Reference No: 1.40	//



GLASS CUT OUTS

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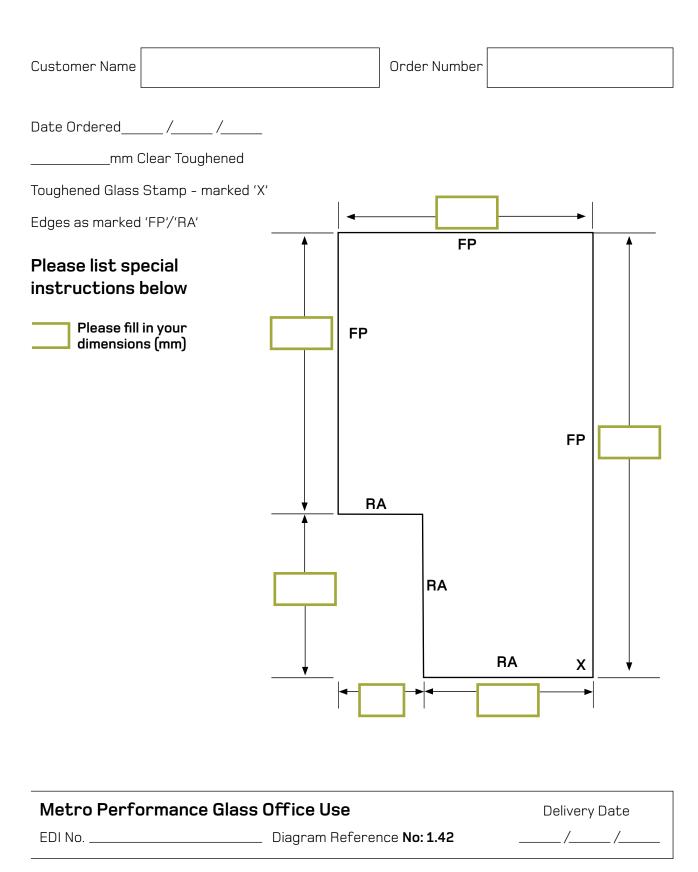
RIGHT NOTCHED SIDE PANEL



Metro Performance Glass Office Use Delivery Date EDI No. Diagram Reference No: 1.41 /___/____



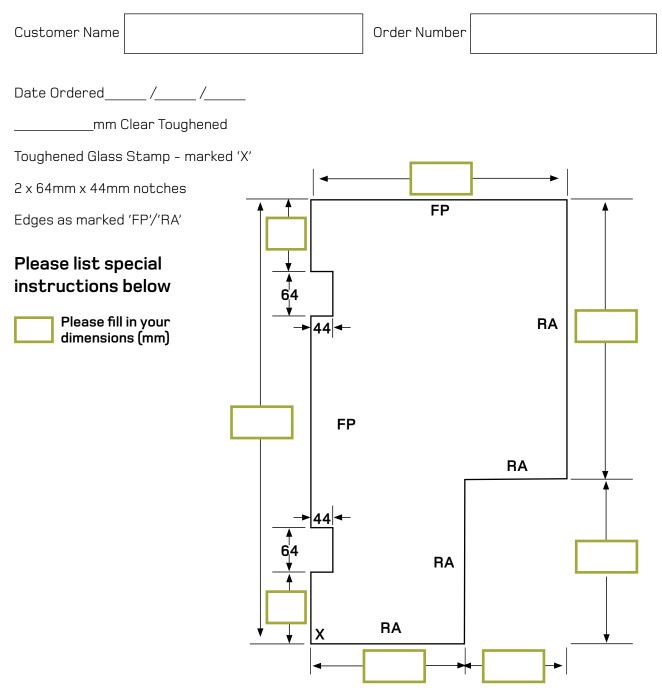
LEFT NOTCHED SIDE PANEL





RIGHT NOTCHED RETURN HINGE PANEL

Hinge Types: MF2, MF2-90



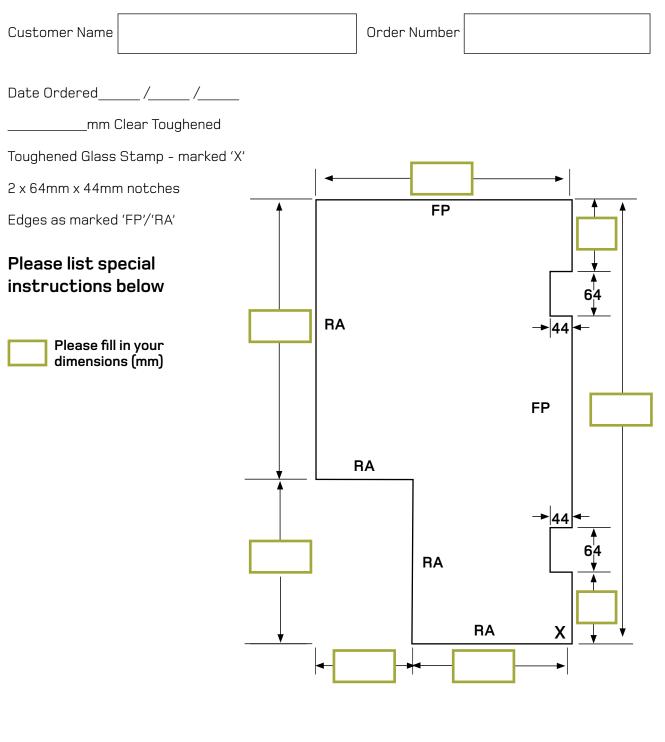
Metro Performance Glass	Delivery Date	
EDI No	Diagram Reference No: 143	//

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LEFT NOTCHED RETURN HINGE PANEL

Hinge Types: MF2, MF2–90



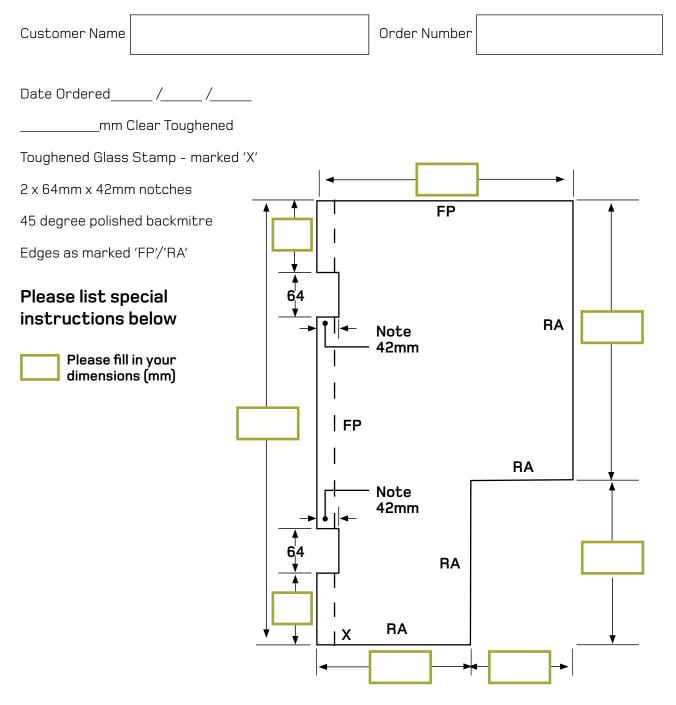
Metro Performance Glass Office Use		Delivery Date
EDI No	Diagram Reference No: 1.44	//

1.44



RIGHT NOTCHED RETURN HINGE PANEL WITH BACKMITRE 1.45

Hinge Type: MF2-135

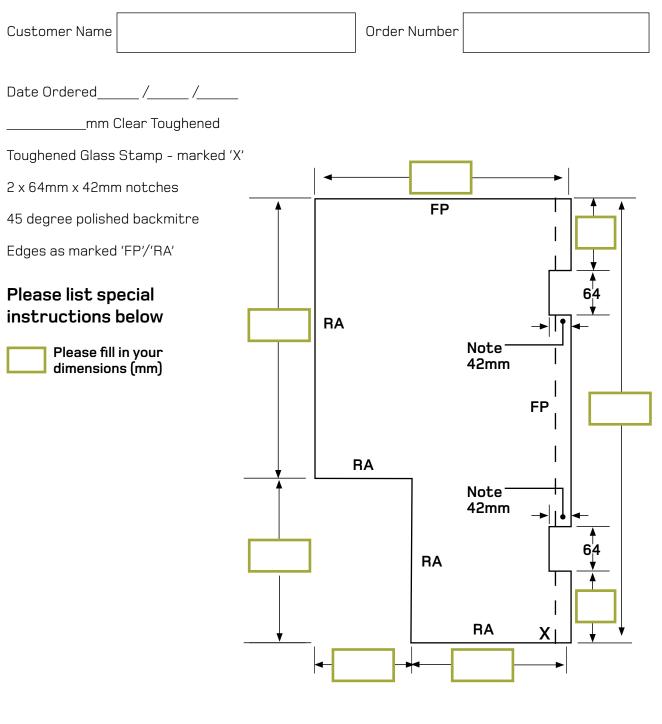


Metro Performance Glass	Delivery Date	
EDI No	Diagram Reference No: 1.45	//



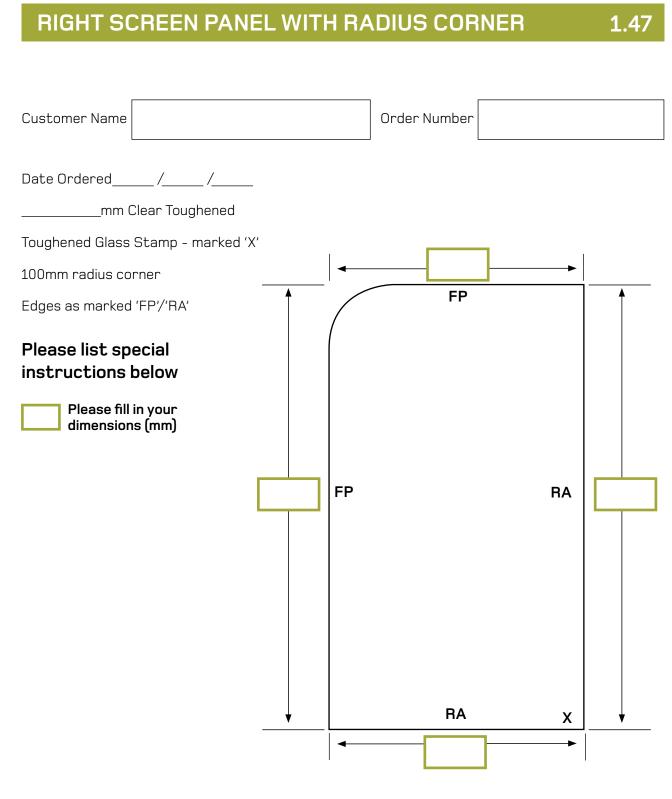
LEFT NOTCHED RETURN HINGE PANEL WITH BACKMITRE 1.46

Hinge Type: MF2-1350



Metro Performance Glass	Delivery Date	
EDI No	Diagram Reference No: 1.46	//



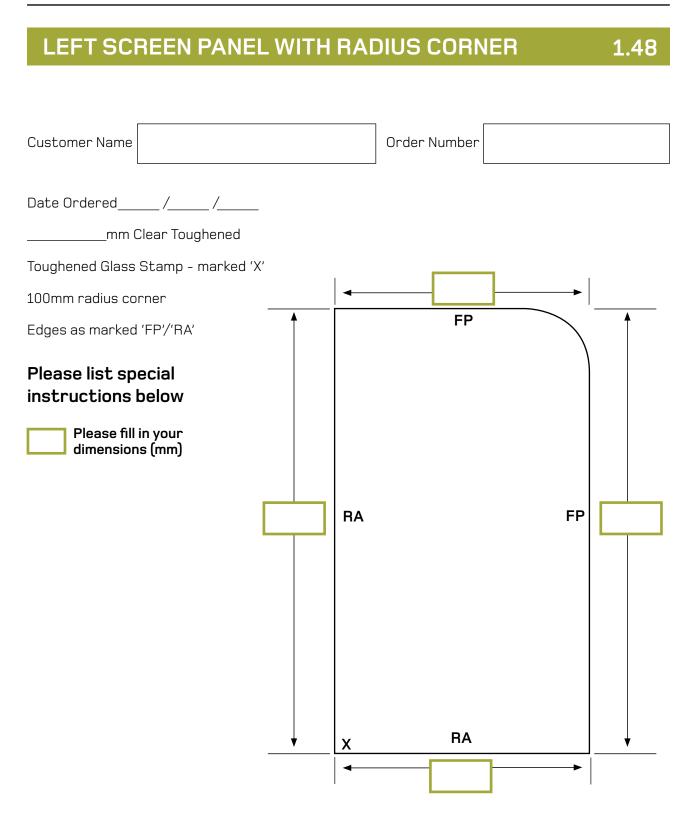


Metro Performance Glass Office Use Delivery Date EDI No. Diagram Reference No: 1.47 _/____

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640 METRO

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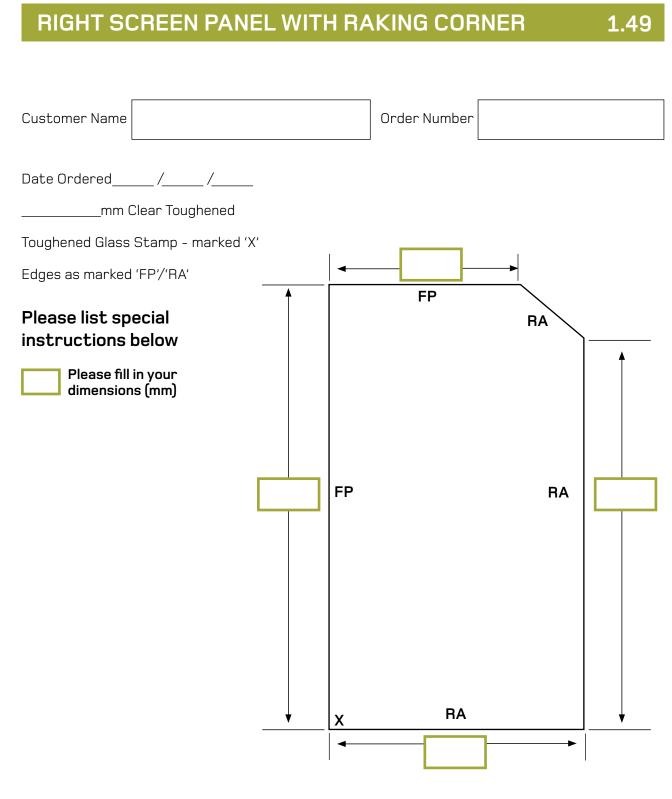


Metro Performance Glass	Office Use	Delivery Date
EDI No	Diagram Reference No: 1.48	//

METRO 641

G

LASS CUT OUTS



Metro Performance Glass Office Use		Delivery Date
EDI No	Diagram Reference No: 1.49	//



LEFT SCREEN PANEL WITH RAKING CORNER 1.50 Customer Name Order Number Date Ordered____/___/ _mm Clear Toughened Toughened Glass Stamp - marked 'X' Edges as marked 'FP'/'RA' FP **Please list special** RA instructions below Please fill in your dimensions (mm) FP RA RA Х

Metro Performance Glass Office Use		Delivery Date
EDI No	Diagram Reference No: 1.50	//

12

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HEAD BRACE

Customer Name

12

Date Ordered_____/____/

_____mm Clear Toughened

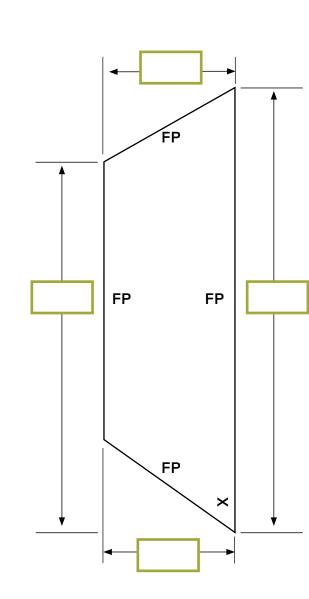
Toughened Glass Stamp - marked 'X'

Edges as marked 'FP'/'RA'

Note: This diagram is based on equal and even angles. If this can not be achieved please supply a template.

Please list special instructions below

Please fill in your dimensions (mm)



Order Number

Metro Performance Glass Office Use Delivery Date EDI No. Diagram Reference No: 1.51 _/__/___



HEAD BRACE

Hinge Types:

Customer Name		Order Number	
Date Ordered	//		
mm Cl	ear Toughened		
Toughened Glass S	Stamp – marked 'X'		
Edges as marked 'l	FP'		
Please list spe instructions b			

Metro Performance Glass Office Use

Delivery Date

EDI No. __

___ Diagram Reference **No: 1.52**

__/___/__

12



GLASS PREPARATION

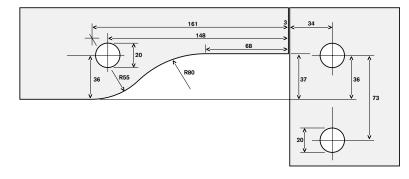
Patch Fittings

MP70 – Over panel with two optional Stops Patch Fitting SKU Reference: 301120, 301121, 301122



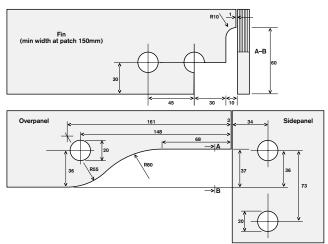
Patch Fittings

MP40 – Over Panel to Side Panel Patch Fitting SKU Reference: 301107, 301108, 301109



Patch Fittings

MP41 – Over Panel to Side Panel with Fin Patch Fitting SKU Reference: 301110, 301111, 301984, 301113, 301114, 301112





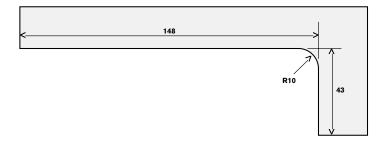




Patch Fittings

MP100 – Bottom Patch Lock

SKU Reference: 500437, 500463, 500464, 500459, 500460, 500461



Patch Fittings

MP200 & MP220 – Centre Patch Lock/ Centre Patch Keeper

SKU Reference:	43
501170	<>
501172	
501171	`R10
500297	
500465	
500435	
301101	132
301102	132
301103	

Patch Fittings

MP10 / MP20 / MP22 / MP34* – Bottom Patch Fitting/Top Patch Fitting/Over Panel to Wall Patch Fitting Kit

SKU Reference: 301083 301084 161 301085 148 301092 68 301093 20 301094 301098 R80 36 R55 37 301099 301100 500434 500436 500296



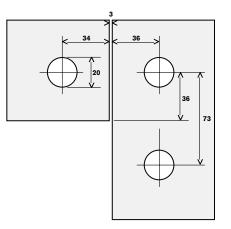
12





Patch Fittings

MP61 – Over Panel to Side Panel with Optional Stop Patch Fitting SKU Reference: 301117, 301118, 301119



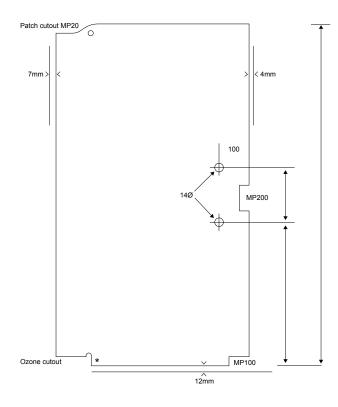




Patch Fittings

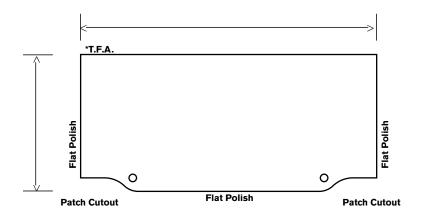
Ozone – Door Panel Centre & Bottom Locking

Typical Schematic Overview



Patch Fittings

MP40, MP41 – Overlight Panel Between Side Lights Typical Schematic Overview







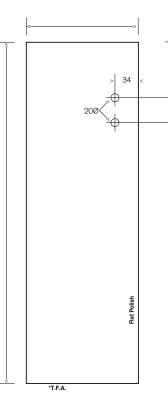
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Patch Fittings

MP40, MP41 – Side Light for Over Lights Typical Schematic Overview



3

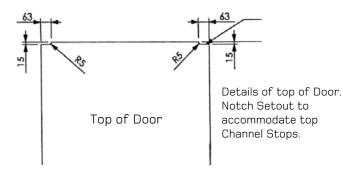


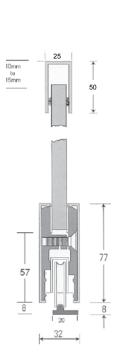
73

Metro MRS90 - Sliding Door System

Bottom Rolling

SKU Reference: 500033, 500034, 500619, 500620

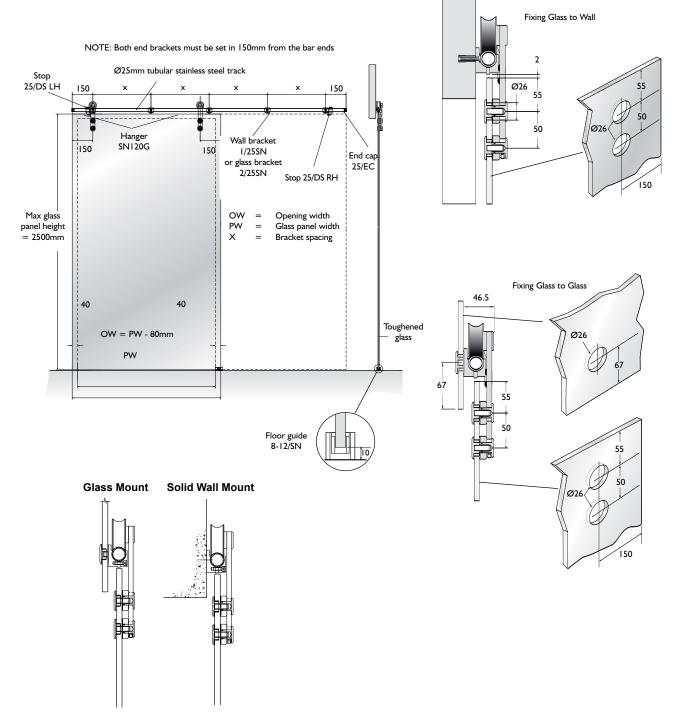






Sienna SN120

Tubular Sliding Door System SKU Reference: 501140, 501139, 501138, 501137



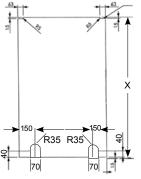


Linear 100 - Sliding Door System

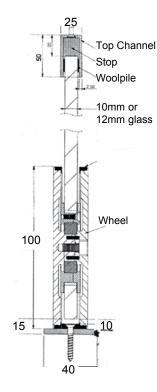
Bottom Rolling

SKU Reference: 500019, 500697, 500020, 500698, 500021, 500699

Typical Glass Set Out



X = height of door which is finished opening height less 35mm Note: Allow for selected handle glass preparation



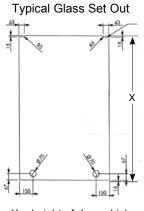
3

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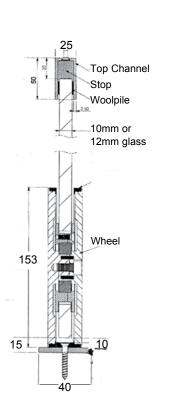
Linear 153 - Sliding Door System

Bottom Rolling

SKU Reference: 500022, 500700, 500023, 500701, 500024, 500702

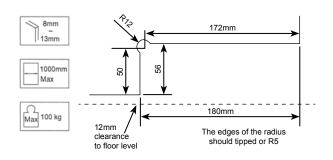


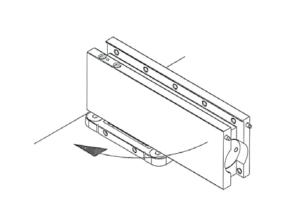
X = height of door which is finished opening height less 35mm Note: Allow for selected handle glass preparation



Ozone Plus EN3

FH100 – Standard Strength Hydraulic Patch SKU Reference: 301076, 301077, 301762, 301763



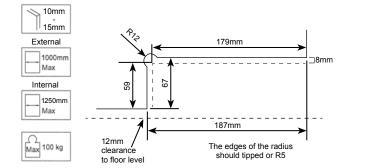


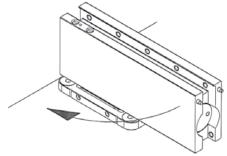
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12

Ozone Plus EN5

FH105 – High Strength Hydraulic Patch SKU Reference: 301079, 301080, 301764, 301765









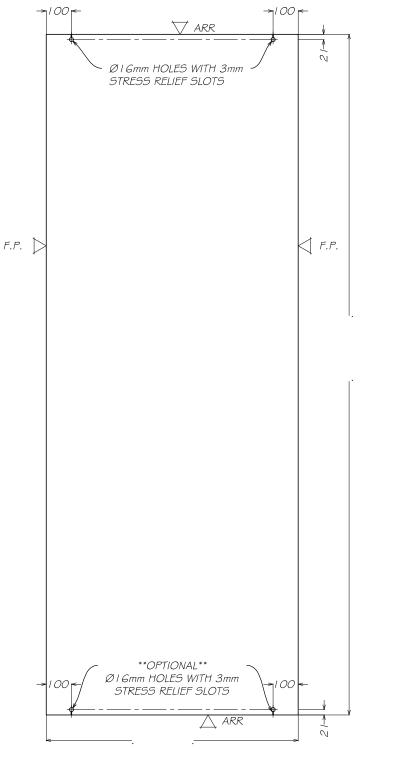
12

AGA Slystack/Bi-Fold

Rail Panel

Stamp on bottom edge as shown (*) Optional fixing holes at bottom edge only if bottom rail requires permanent fixing.

Typical Schematic Overview





Glass Finishing Key: ARR: ARRISSED FG: FLAT GRIND

FP: FLAT POLISHED

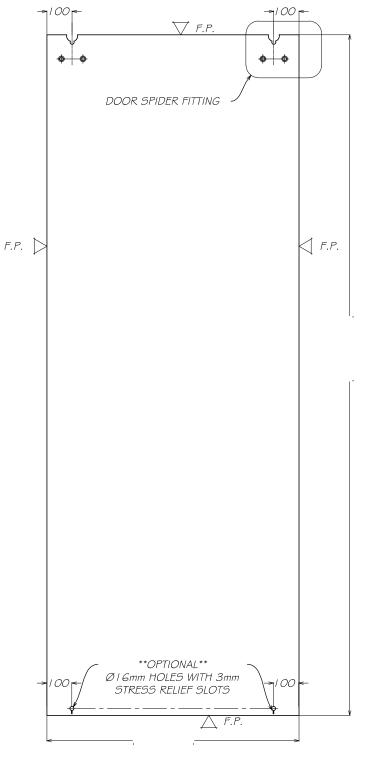


Austvision SpiderDoor System

Spider Panel

Stamp on bottom edge as shown (*) Optional fixing holes at bottom edge only if bottom rail requires permanent fixing.

Typical Schematic Overview



12

Glass Finishing Key: ARR: ARRISSED FG: FLAT GRIND

FP: FLAT POLISHED

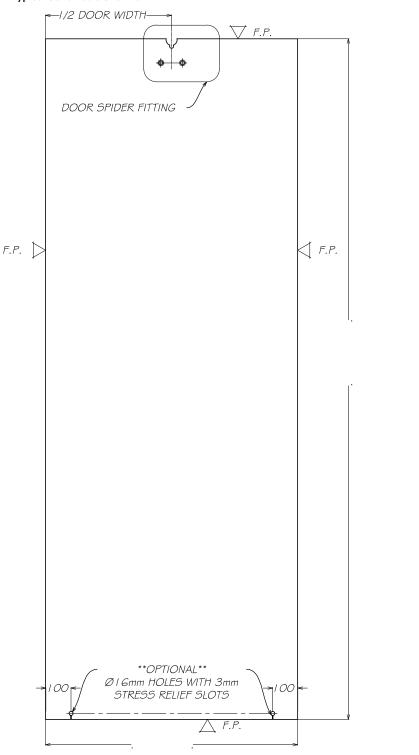


Austvision Slydstak & Bi-Folding Door System

Spider Panel

Stamp on bottom edge as shown (*)

Typical Schematic Overview





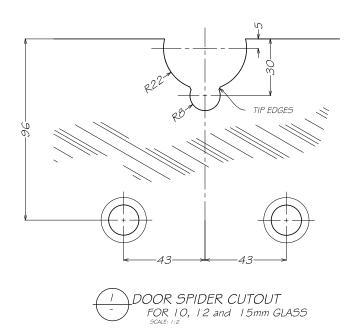
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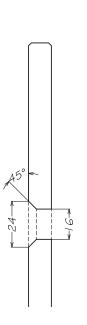
FP: FLAT POLISHED



Austvision Slydstak & Bi-Folding Door System

Typical Cut Outs/Spider Panel





Glass Finishing Key:

ARR: ARRISSED FG: FLAT GRIND

FP: FLAT POLISHED

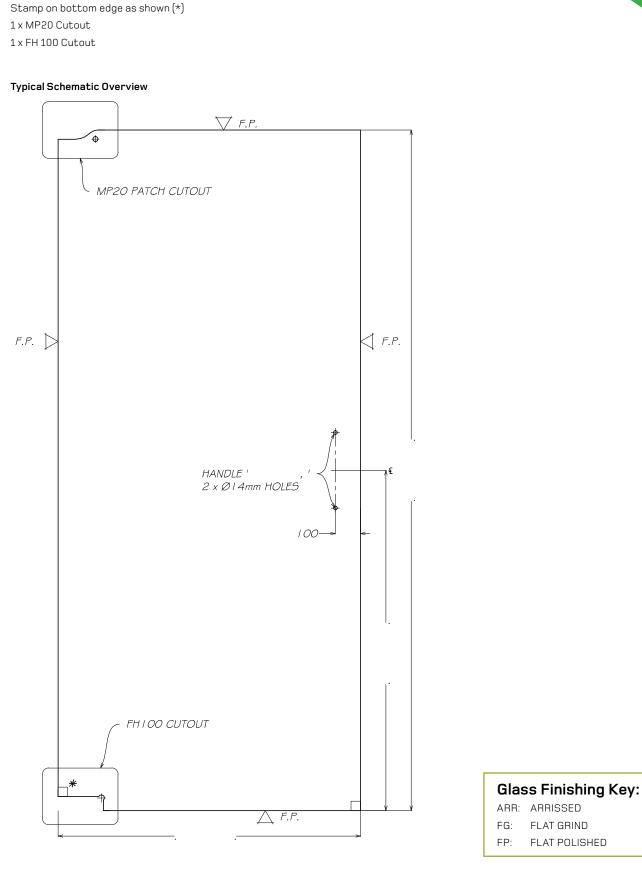
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Ozone FH 100

Non Locking

GLASS CUT OUTS





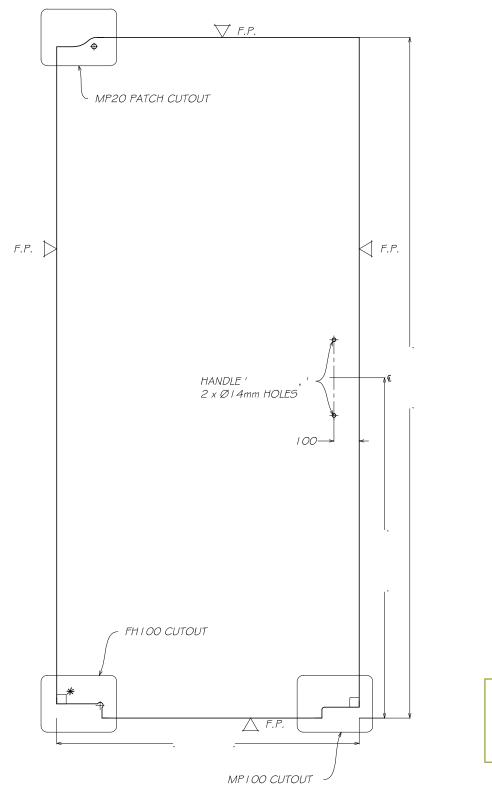
Ozone FH 100

Bottom Locking

Stamp on bottom edge as shown (*) 1 x MP20 Cutout

- 1 x FH 100 Cutout
- 1 x MP 100 Cutout

Typical Schematic Overview



3

12



Glass Finishing Key:

FLAT GRIND FLAT POLISHED

ARR: ARRISSED

FG:

FP:

Ozone FH 100

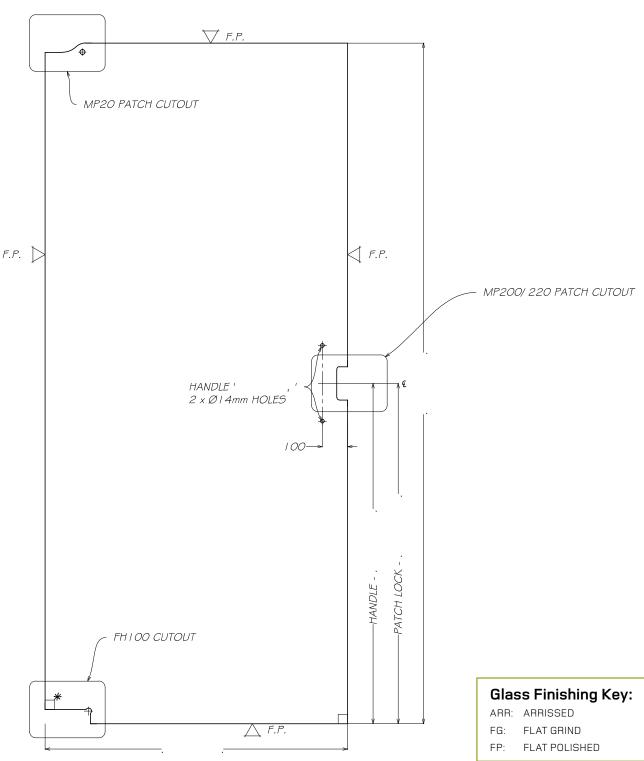
Side Locking

Stamp on bottom edge as shown (*) 1 x MP20 Cutout

- 1 x FH 100 Cutout
- 1 x MP 200/220 Cutout

Typical Schematic Overview







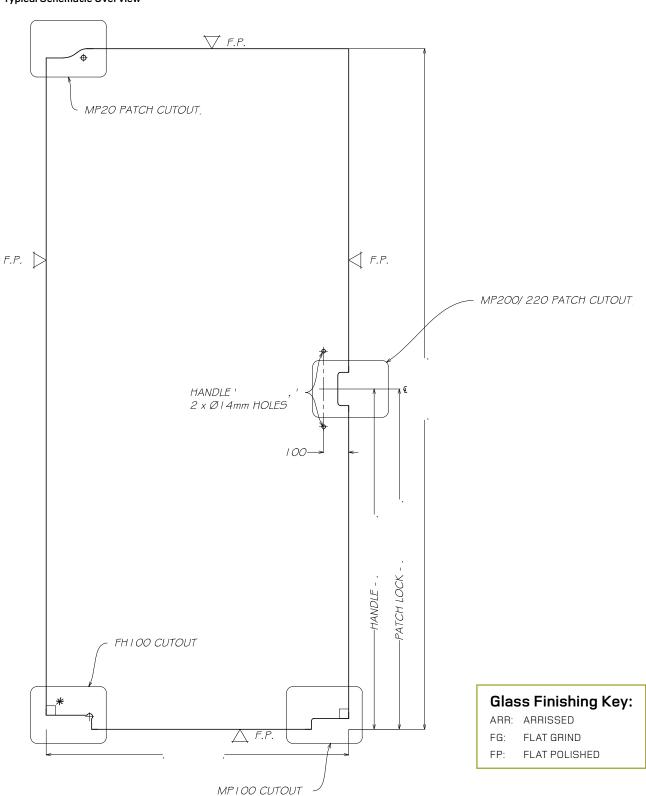
Ozone FH 100

Bottom/Side Locking

Stamp on bottom edge as shown (*) 1 x MP20 Cutout 1 x FH 100 Cutout

- 1 x MP 100 Cutout
- 1 x MP 200/220 Cutout

Typical Schematic Overview



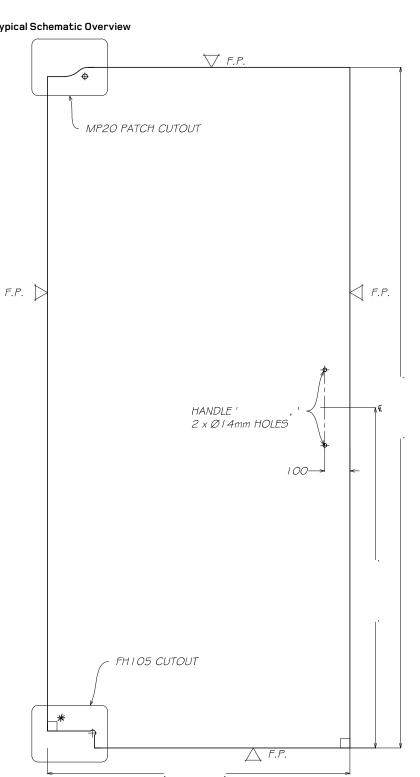


Ozone FH 105

Non Locking

Stamp on bottom edge as shown (*) 1 x MP20 Cutout 1 x FH 105 Cutout

Typical Schematic Overview



Glass Finishing Key:	
ARR:	ARRISSED
FG:	FLAT GRIND
FP:	FLAT POLISHED

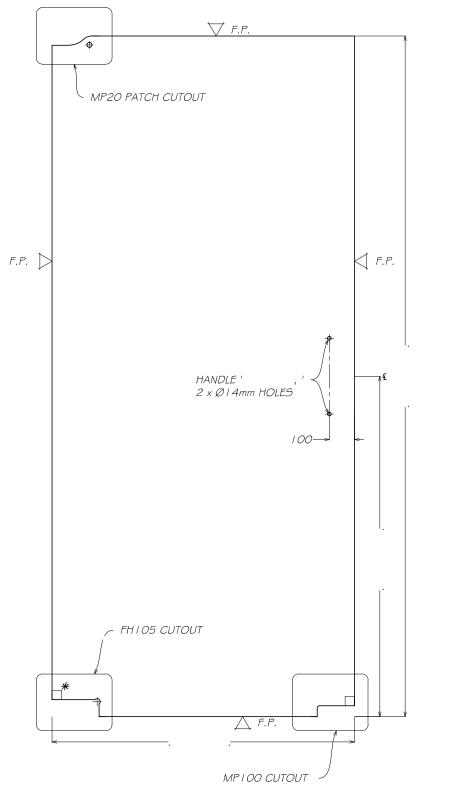


Ozone FH 105

Bottom Locking

Stamp on bottom edge as shown (*) 1 x MP20 Cutout 1 x FH 105 Cutout 1 x MP 100 Cutout

Typical Schematic Overview



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Glass Finishing Key:ARR:ARRISSEDFG:FLAT GRINDFP:FLAT POLISHED



Ozone FH 105

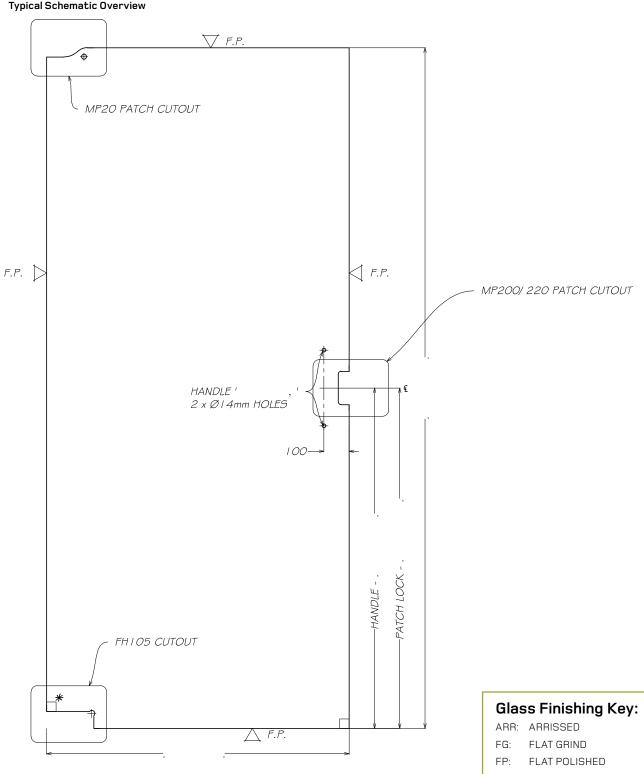
Side Locking

Stamp on bottom edge as shown (*) 1 x MP20 Cutout 1 x FH 105 Cutout 1 x MP 200/220 Cutout

Typical Schematic Overview



12



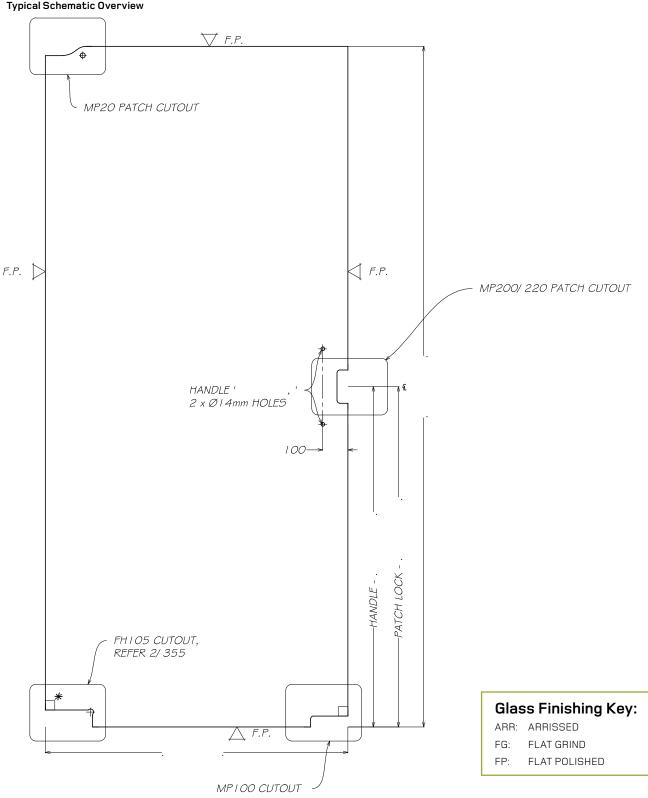
664 METRO

Ozone FH 105

Bottom/Side Locking

Stamp on bottom edge as shown (*) 1 x MP20 Cutout 1 x FH 105 Cutout 1 x MP 100 Cutout 1 x MP 200/220 Cutout

Typical Schematic Overview



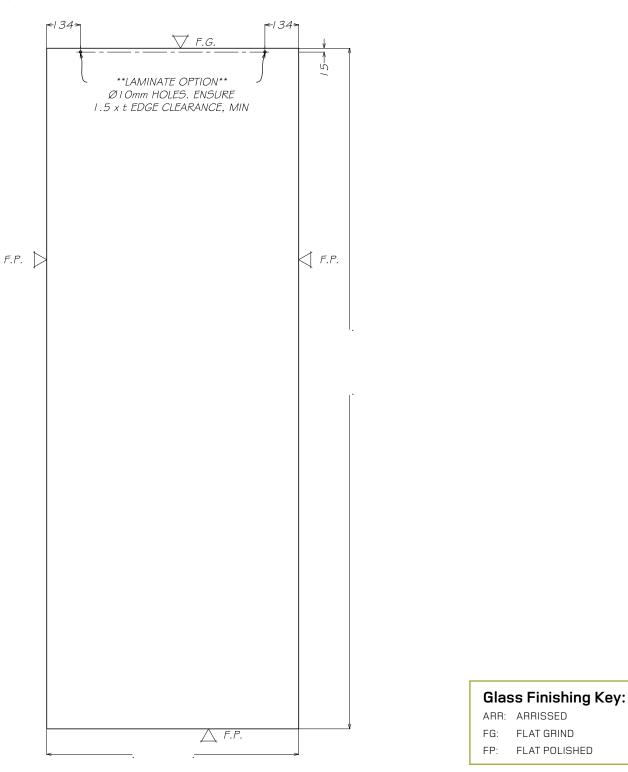


GG150 Glass Glide Sliding Door

Door Panel

Stamp on bottom edge as shown (*) Optional fixing holes for toughened laminate (less then 12m t). Mark door handles as required.

Typical Schematic Overview





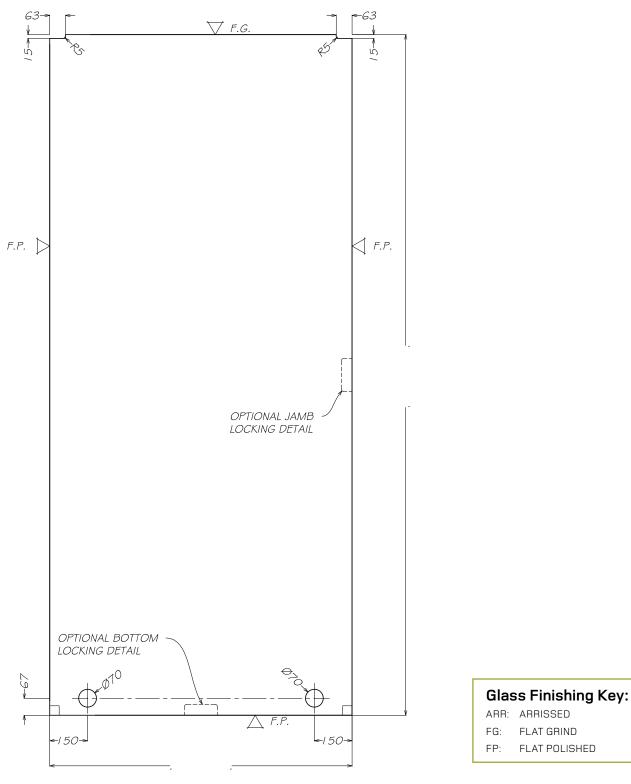


Linear 153 Sliding Door System

Door Panel

Stamp on bottom edge as shown (*) Ø70mm cutout can move from 150mm – 1/8 door width, maximum.

Typical Schematic Overview



3



FLAT GRIND

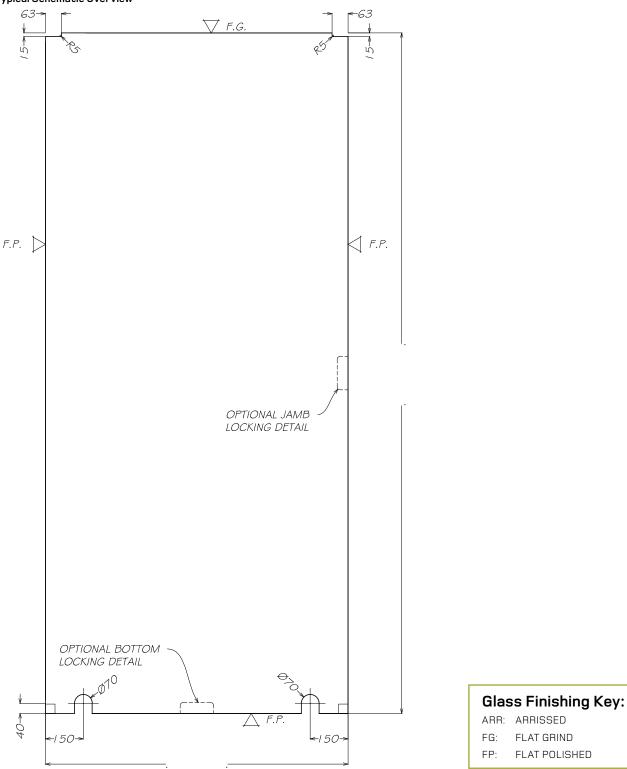
FLAT POLISHED

Linear 100 Sliding Door System

Door Panel

Stamp on bottom edge as shown (*) Ø70mm cutout can move from 150mm – 1/8 door width, maximum.

Typical Schematic Overview



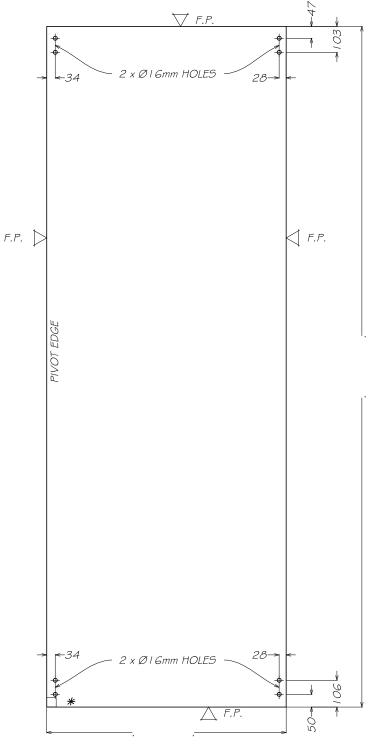


GLASS CUT OUTS

Jamb Pivot Panel

Stamp on bottom edge as shown (*) Refer to M75 Bi-Fold door - Typical dimension key for maximum door size calculations. See Section 3 Frameless Commercial Doors, Page 388.

Typical Schematic Overview



Glass Finishing Key: ARR: ARRISSED FG: FLAT GRIND FP: FLAT POLISHED



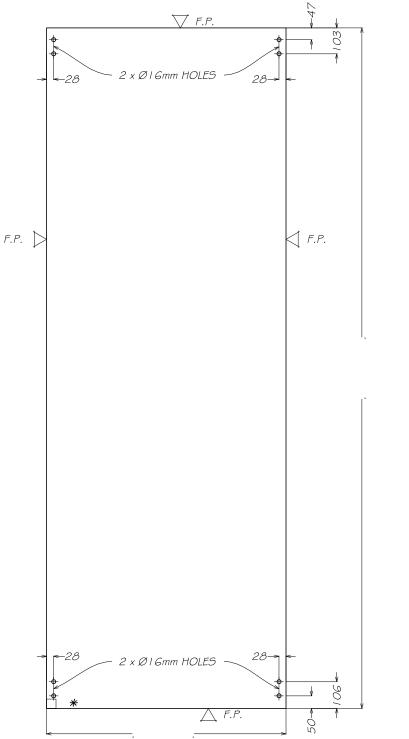
G

LASS CUT OUTS

Intermediate Panel

Stamp on bottom edge as shown (*) Refer to M75 Bi-Fold door - Typical dimension key for maximum door size calculations.

Typical Schematic Overview



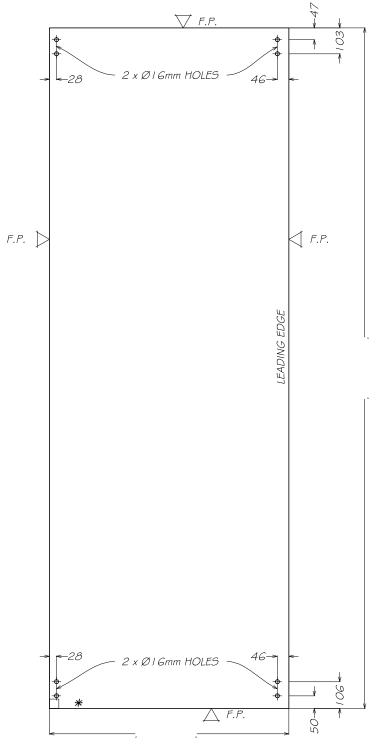




Lead Panel – Even Door Set

Stamp on bottom edge as shown (*) Refer to M75 Bi-Fold door - Typical dimension key for maximum door size calculations. Mark door handle as required.

Typical Schematic Overview



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LASS CUT OUTS

Lead Panel – Uneven Door Set

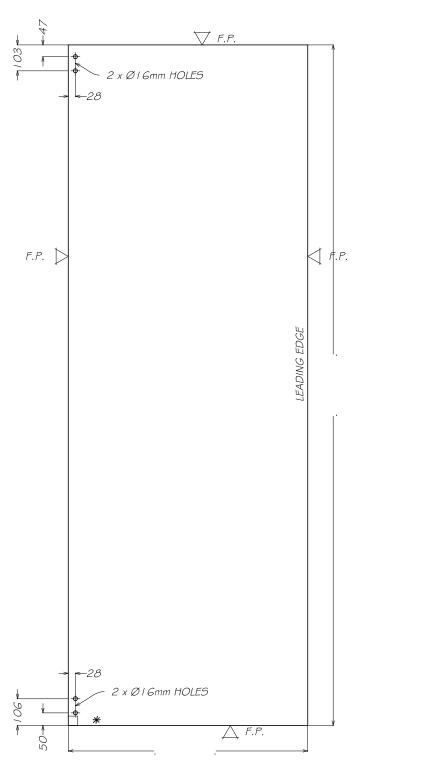
Stamp on bottom edge as shown (*)

Refer to M75 Bi-Fold door - Typical dimension key for maximum door size calculations. Mark door handle as required.

Typical Schematic Overview



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Glass Finishing Key:

FLAT POLISHED

FLAT GRIND

ARR: ARRISSED

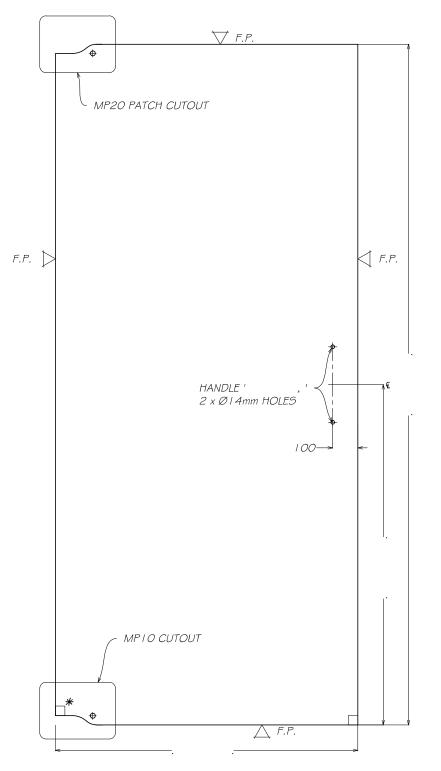
FG:

FP:

Non Locking

1 x MP20 Cutout 1 x MP10 Cutout

Typical Schematic Overview



3

12

Glass Finishing Key: ARR: ARRISSED FG: FLAT GRIND FP: FLAT POLISHED



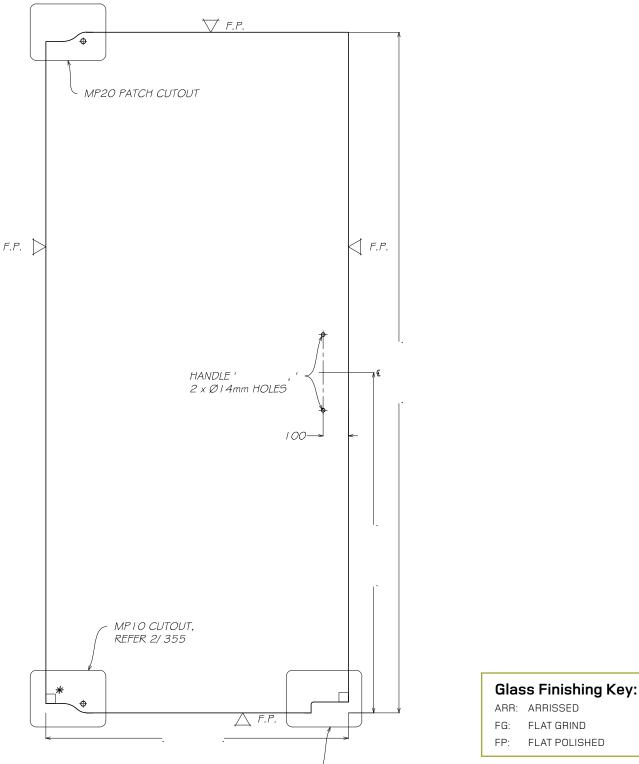


Bottom Locking

1 x MP20 Cutout 1 x MP10 Cutout 1 x MP100 Cutout

Typical Schematic Overview

12



MPIOO CUTOUT

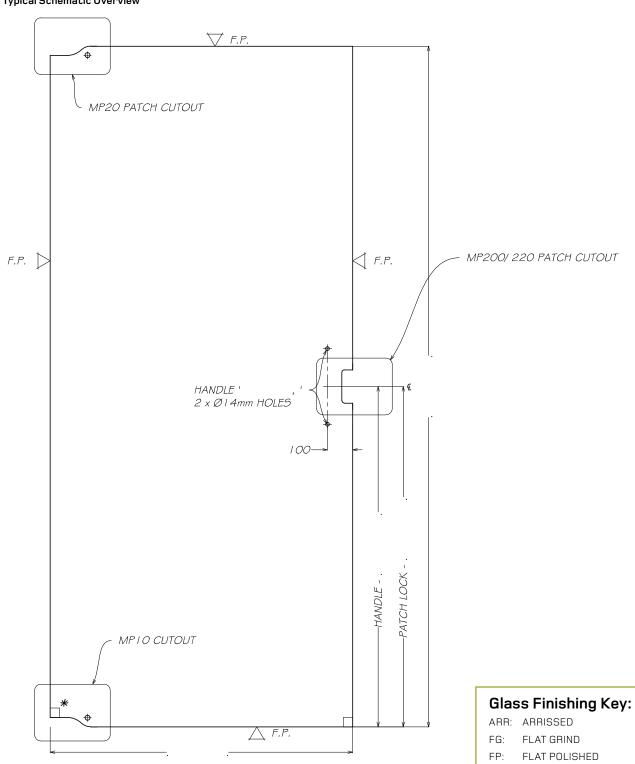




Side Locking

1 x MP20 Cutout 1 x MP10 Cutout 1 x MP 200/220 Cutout

Typical Schematic Overview

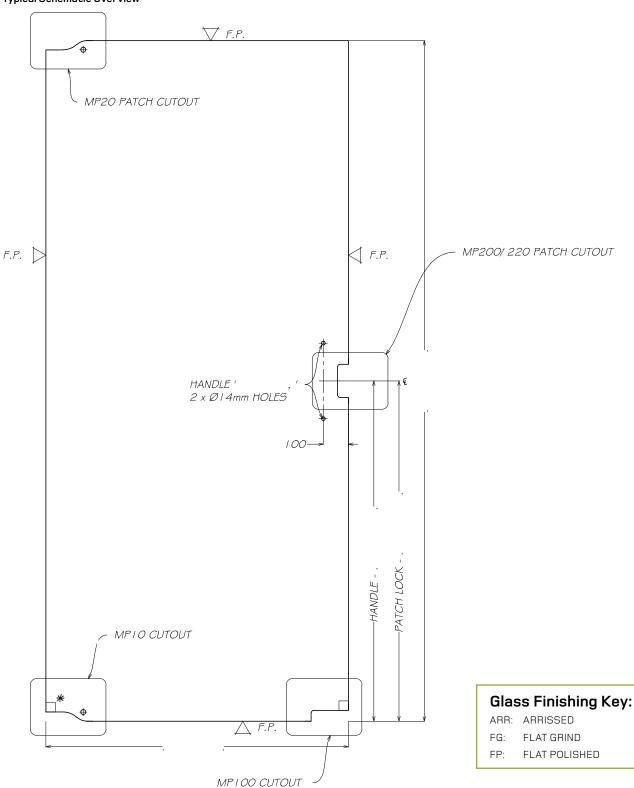




Bottom/Side Locking

1 x MP20 Cutout 1 x MP10 Cutout 1 x MP100 Cutout 1 x MP 200/220 Cutout

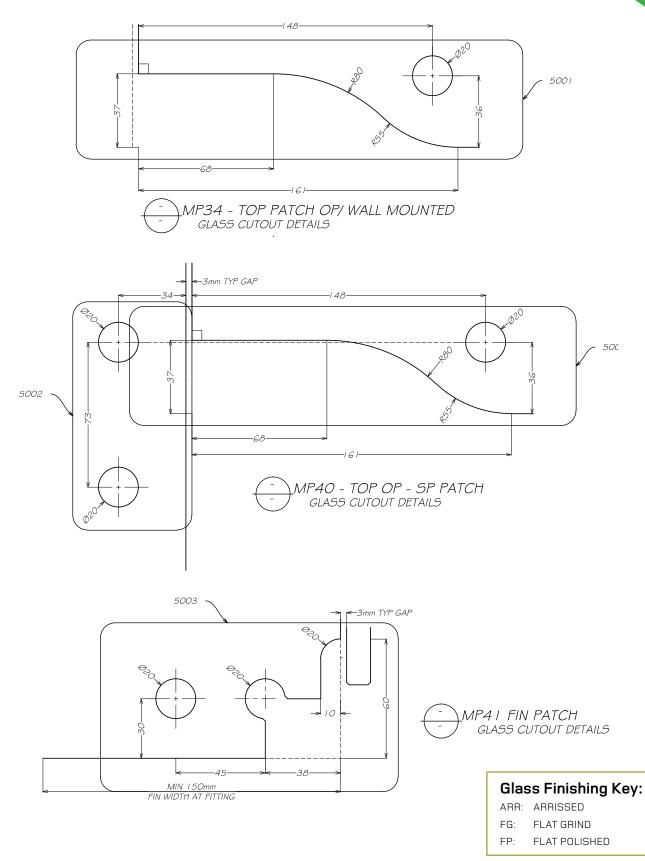
Typical Schematic Overview





Patch Fitting Pivot

Horizontal dimensions made for typical 3mm gap between door and side panel/ supporting structure. Adjust to suit for varying gap if required.

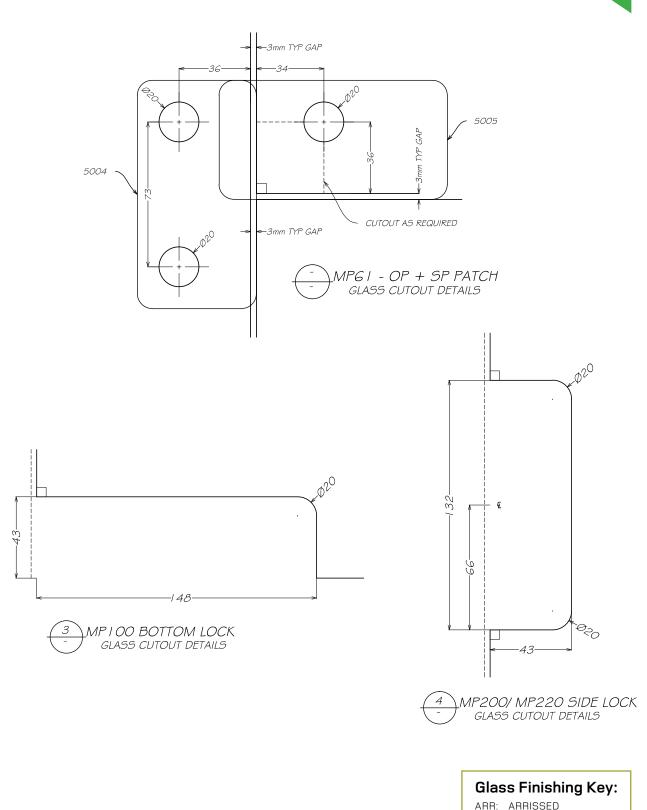


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Patch Fitting Pivot

Horizontal dimensions made for typical 3mm gap between door and side panel/ supporting structure. Adjust to suit for varying gap if required.



3

FLAT GRIND

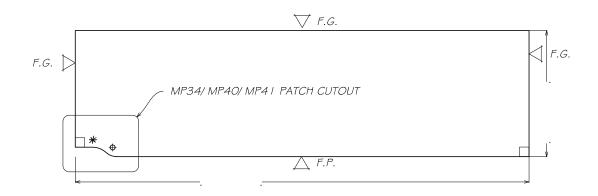
FLAT POLISHED

FG: FP:

Over Panel

1 x Top Patch

Flat polish 1 x Long Edge Stamp on bottom edge as shown (*) 2 x MP34/40/41 cutout



3

12

Glass Finishing Key: ARR: ARRISSED FG: FLAT GRIND FP: FLAT POLISHED

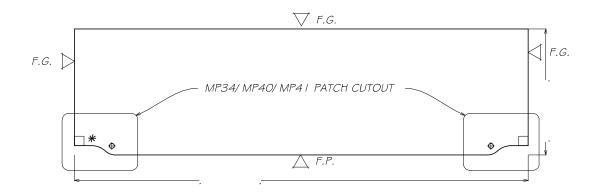


Over Panel

2 x Top Patch

Flat polish 1 x Long Edge Stamp on bottom edge as shown (*) 2 x MP34/40/41 cutout





Glass Finishing Key:

ARR: ARRISSED

FG: FLAT GRIND

FP: FLAT POLISHED



12

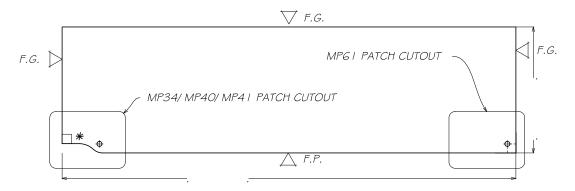
680 METRO

Over Panel

1 x Top Patch + MP61

Flat polish 1 x Long Edge Stamp on bottom edge as shown (*) 2 x MP34/40/41 cutout 1 x MP61 cutout

Typical Schematic Overview



3

Glass Finishing Key:ARR:ARRISSEDFG:FLAT GRINDFP:FLAT POLISHED



GLASS CUT OUTS

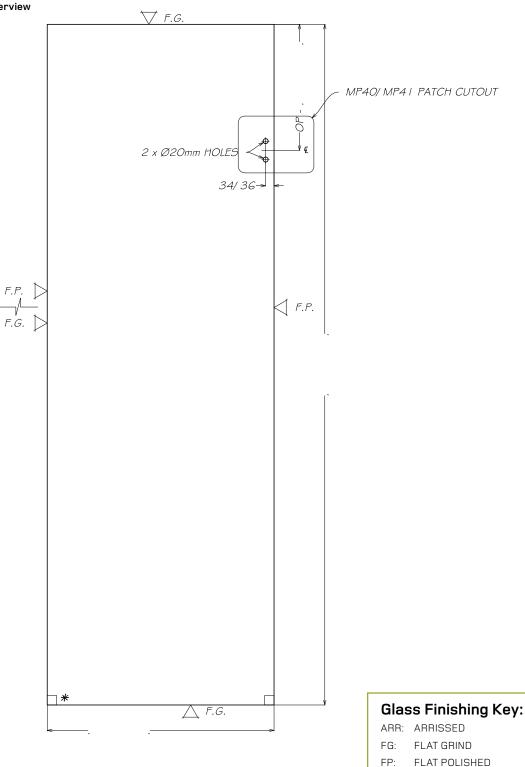
Side Panel

For Over Panel

Flat polish 1 x Long Edge (F.P. second long edge if butt jointing to second panel) Stamp on bottom edge as shown (*) 1 x MP40/41 cutout

Typical Schematic Overview







Side Panel

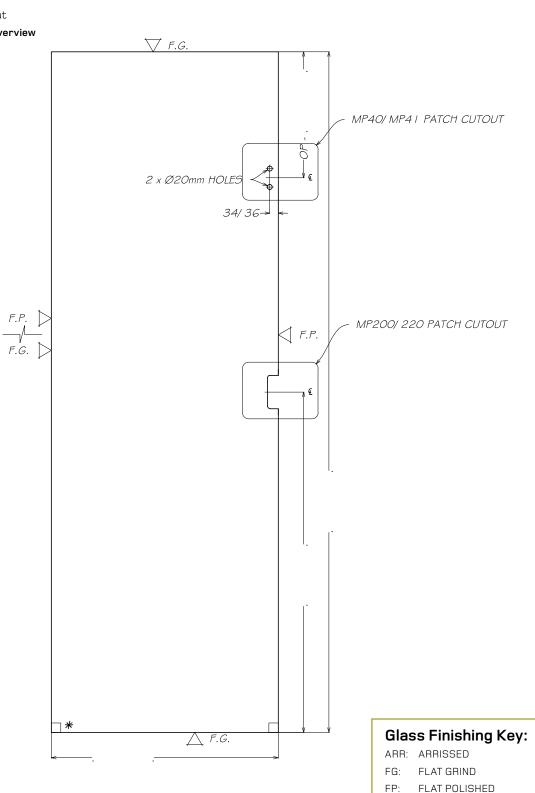
For Over Panel –Locking

Flat polish 1 x Long Edge (F.P. second long edge if butt jointing to second panel) Stamp on bottom edge as shown (*) 1 x MP40/41 cutout

1 x MP200/220 cutout

Typical Schematic Overview







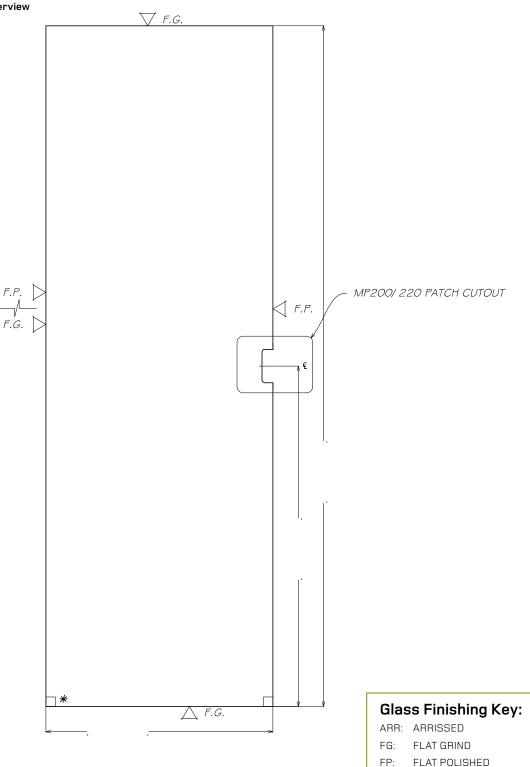
Side Panel

Side Locking

Flat polish 1 x Long Edge (F.P. second long edge if butt jointing to second panel) Stamp on bottom edge as shown (*) 1 x MP200/220 cutout

Typical Schematic Overview





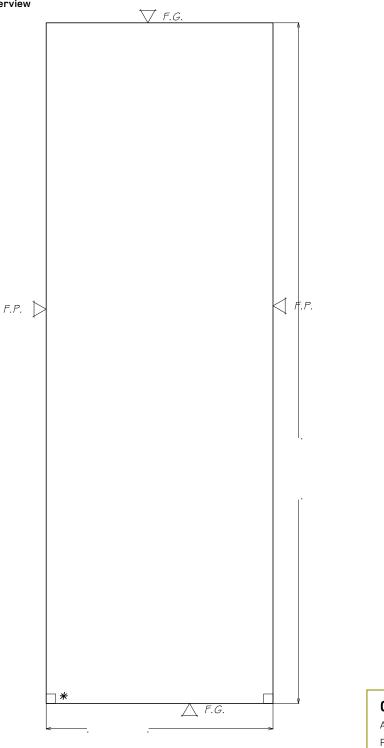


Side Panel

Square/Rectangular

Flat polish 1 x Long Edge Stamp on bottom edge as shown (*)

Typical Schematic Overview



12

Glass Finishing Key:ARR:ARRISSEDFG:FLAT GRINDFP:FLAT POLISHED



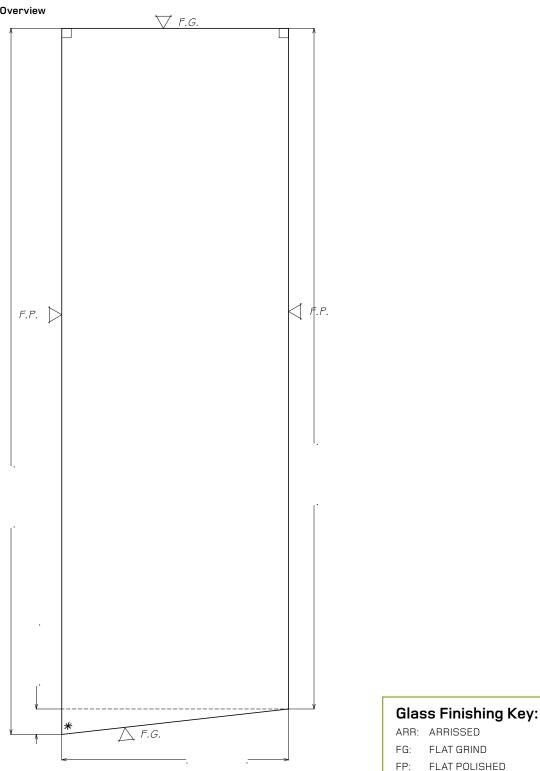
12

Side Panel – Blank

Bottom Raking – Left

Flat polish 1 x Long Edge Stamp on bottom edge as shown (*)

Typical Schematic Overview







FLAT GRIND

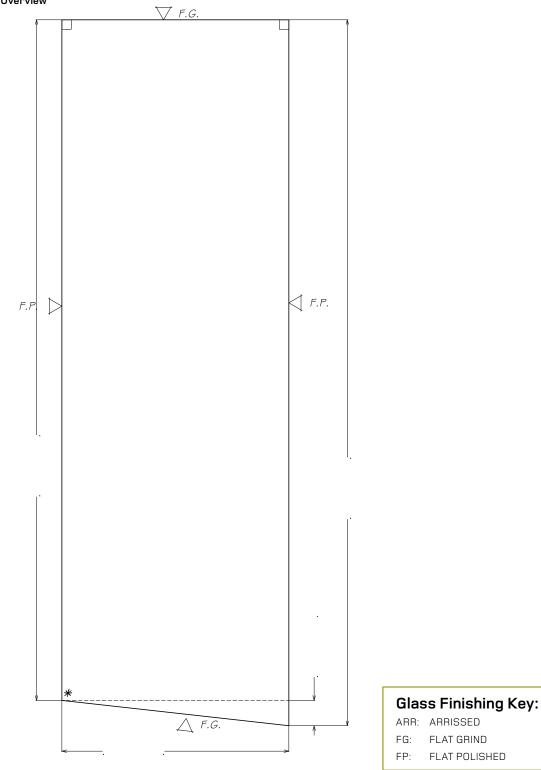
FLAT POLISHED

Side Panel – Blank

Bottom Raking – Right

Flat polish 1 x Long Edge Stamp on bottom edge as shown (*)

Typical Schematic Overview





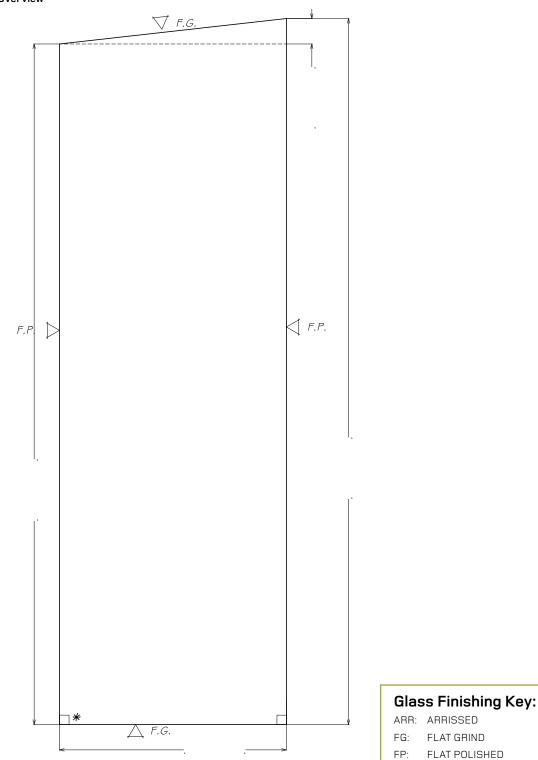
12

Side Panel – Blank

Top Raking – Left

Flat polish 1 x Long Edge Stamp on bottom edge as shown (*)

Typical Schematic Overview





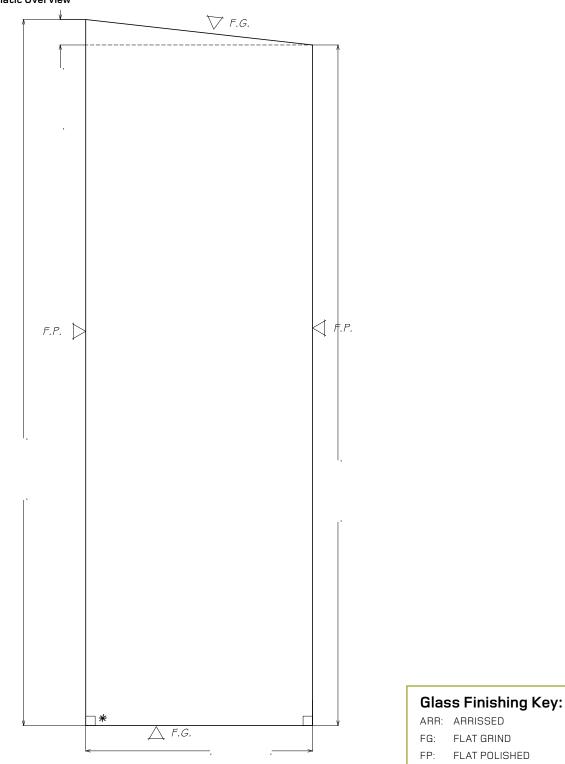


Side Panel – Blank

Top Raking – Right

Flat polish 1 x Long Edge Stamp on bottom edge as shown (*)

Typical Schematic Overview



12

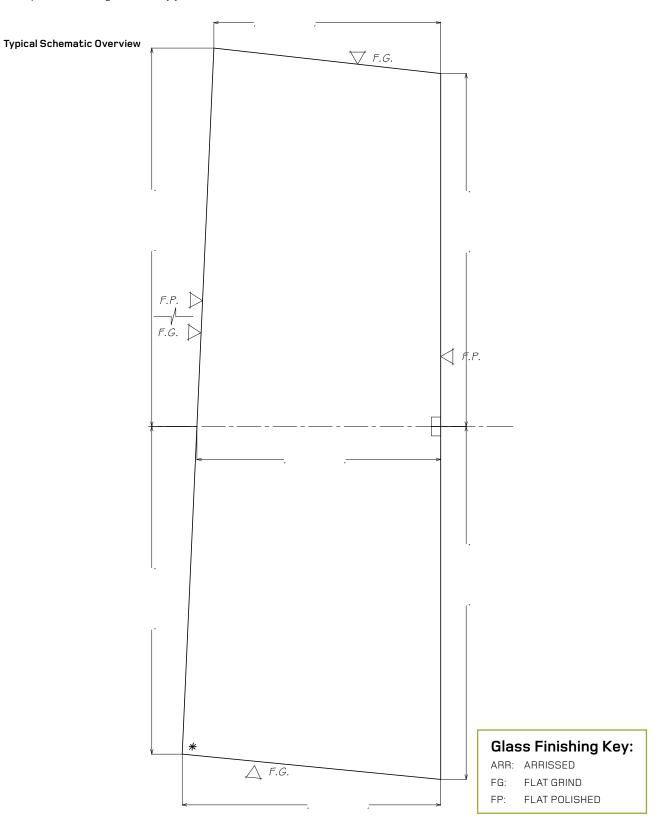
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Side Panel – Blank

3 Edge Raking

Flat polish 1 x Long Edge (F.P. second long edge if butt jointing to second panel) Stamp on bottom edge as shown (*)



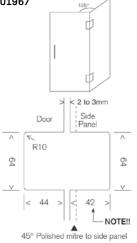


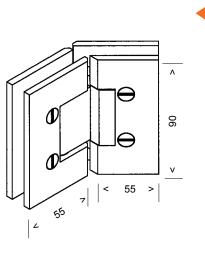


Hinged Doors

MF2-135 Door Hinge

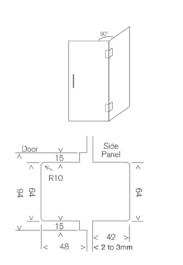
SKU Reference: 300815, 300816, 301815, 301967

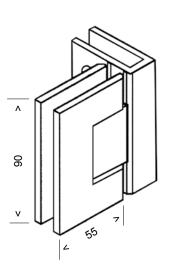




Hinged Doors

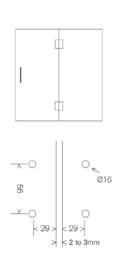
MF2-90 Door Hinge SKU Reference: 300817, 300818

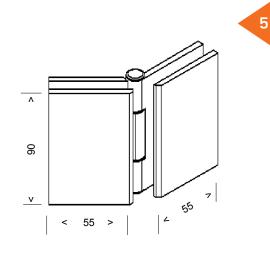




Hinged Doors

MF2-BF Door Hinge SKU Reference: 300820, 300821



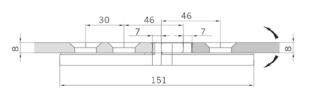


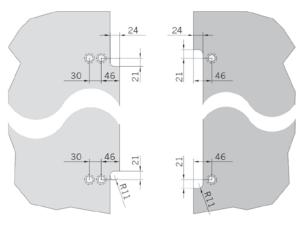


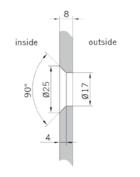
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Hinged Doors

MF2 Designer Door Hinge SKU Reference: 300826, 300827

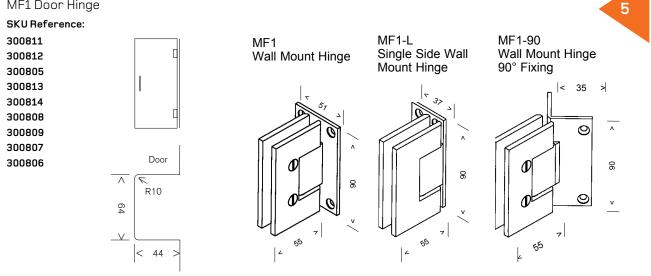








MF1 Door Hinge

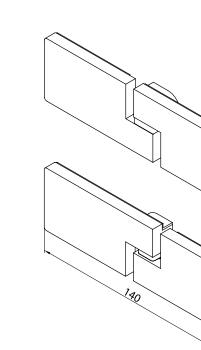




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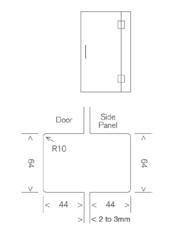
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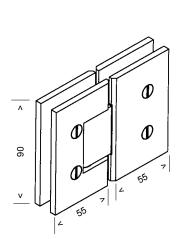


Hinged Doors

MF2 Door Hinge

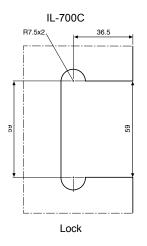
SKU Reference: 300823, 301908, 300825, 300822, 300819

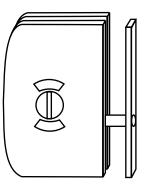




Indicator Locks

For Pivot Doors (Privacy / Locking Options) SKU Reference: 300940, 300941



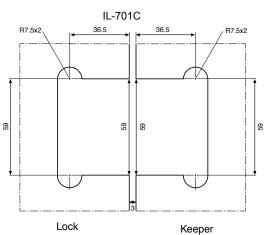


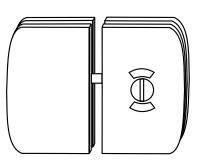


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Indicator Locks

For Pivot Doors (Privacy / Locking Options) SKU Reference: 300947





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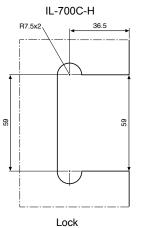
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GLASS CUT OUTS

Indicator Locks

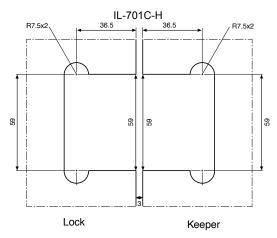
For Pivot Doors (Privacy / Locking Options) SKU Reference: 300939, 300942

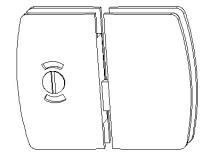




Indicator Locks

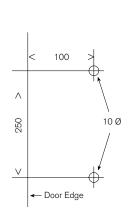
For Pivot Doors (Privacy / Locking Options) SKU Reference: 300949, 300946

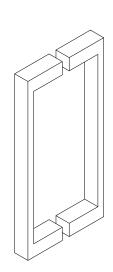




Pull Handles Residential

Square D/Square Wide D/H Square S







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6





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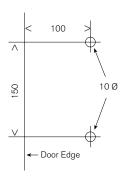
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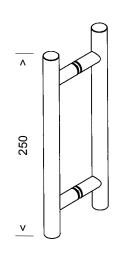
GLASS CUT OUT

Pull Handles Residential

H Sqaure L / H Round L

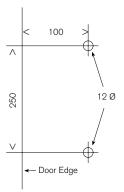
SKU Reference: 300635, 300636, 300641, 300642

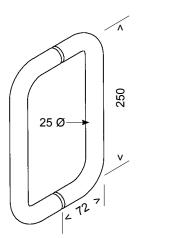




Pull Handles Residential

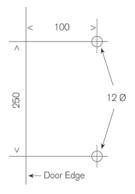
GT-250 Double D Handle SKU Reference: 300632, 300633, 300634

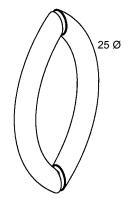


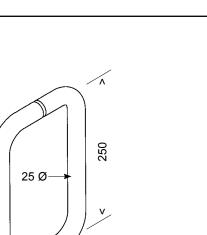


Pull Handles Residential

Delta D SKU Reference: 300676, 300677







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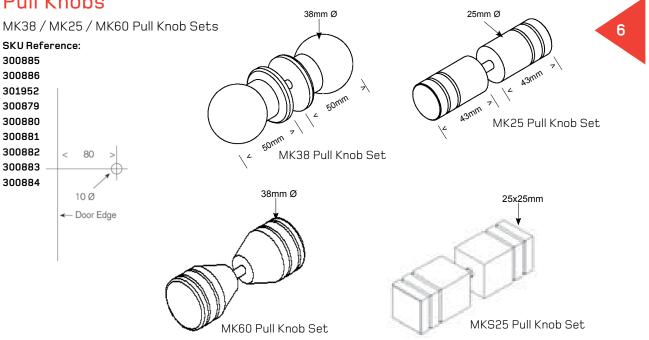
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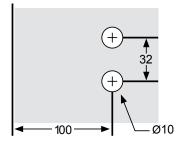


Pull Knobs



Pull Knobs

MK70 Square Pull Knob SKU Reference: 300693, 300694, 300692

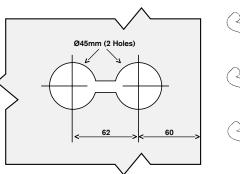


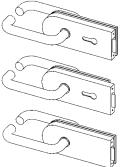


Lever Lock and Latch Set

For Pivot Doors (Exterior Lockset and Interior Lever)

SKU Reference: 500592 500593 500594 500595 500596 500597 500598 500599 301486 301489 301487 301488







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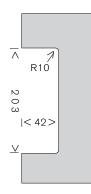
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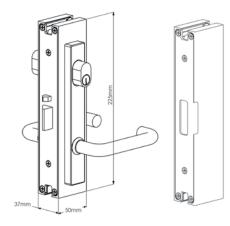


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Lever Lock and Latch Set

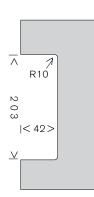
(HEAVY DUTY VERSION) For Pivot Doors (Exterior Lockset and Interior Lever) SKU Reference: 500600, 500601, 300956, 301743, 301744

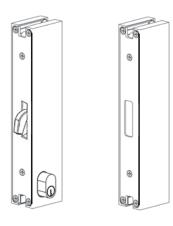




Heavy Duty Sliding Door Lock

(HEAVY DUTY VERSION) For Pivot Doors (Exterior Lockset and Interior Lever) SKU Reference: 500604, 300953, 300954



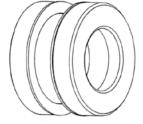


Finger Pulls

Finger Pull Raised SKU Reference: 500606, 500607



Glass cut out, 40mm Dia. Hole





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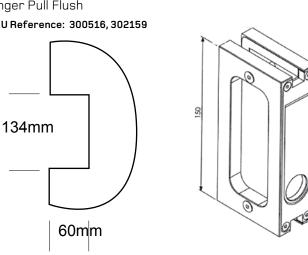
Finger Pulls

Finger Pull Flush SKU Reference: 300516, 302159

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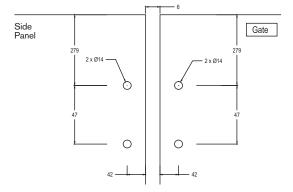


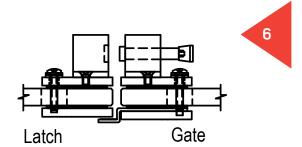
Pool Gate Latches

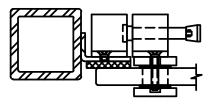
Ozone Pool Gate Latch

SKU Reference: 300906, 300905

PGH - 7 Glass to Glass 180° latch PGH - 11 Glass Gate in inline post



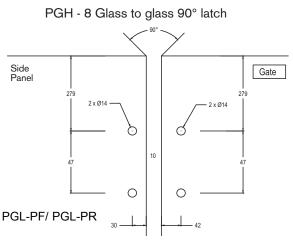


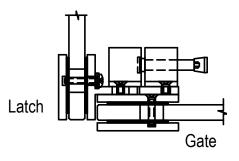


Pool Gate Latches

Ozone Pool Gate Latch

SKU Reference: 300907

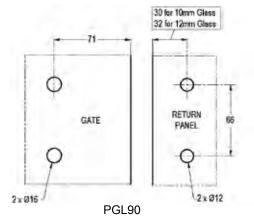


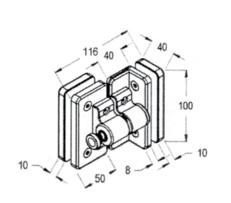




Pool Gate Latches

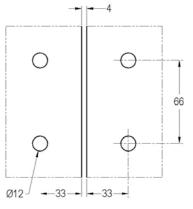
Pivot Doors / Gates - Exterior Lockset SKU Reference:



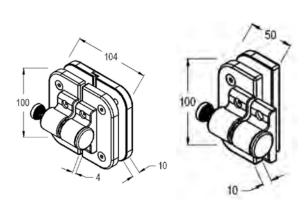


Pool Gate Latches

Pivot Doors / Gates - Exterior Lockset SKU Reference:

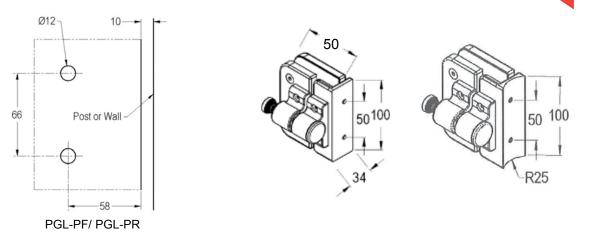






Pool Gate Latches

Pivot Doors / Gates - Exterior Lockset SKU Reference:





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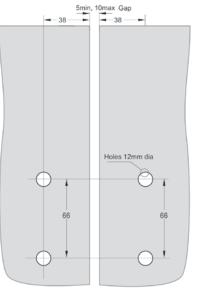
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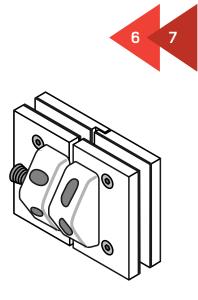


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Malibu Gate Latch (Glass to Glass) SKU Reference: 300900, 300901

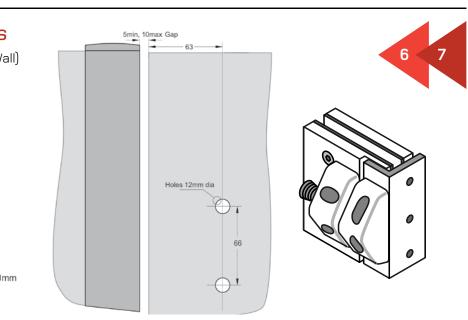




Latch notes - Glass gap 10mm max. Holes 12mm dia Latch to be mounted on inside of gate and latch C/L must be at least 150mm from top.

Pool Gate Latches

Malibu Gate Latch (Glass to Wall) SKU Reference: 300902, 300903



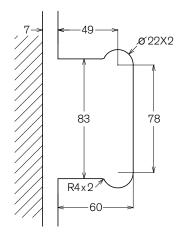
Latch notes

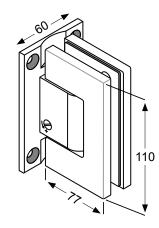
Glass gap 10mm max. Holes 12mm dia
 Latch to be mounted on inside of gate and latch C/L must be at least 150mm from top.

Laguna Pool Gate

High Strength Gate Hinge

SKU Reference: 300790, 300789, 300792, 300791



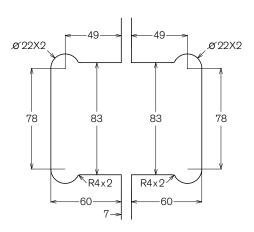






Laguna Pool Gate

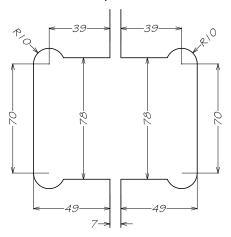
High Strength Gate Hinge SKU Reference: 300786, 300785

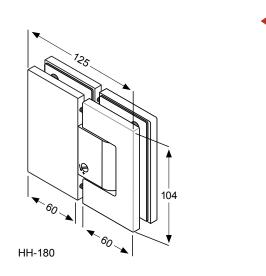


750 110 **

Malibu Pool Gate

Gate Hinge SKU Reference: 300774, 300773

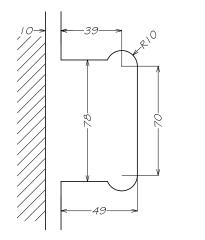




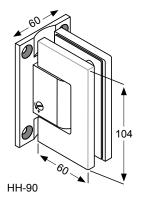
Malibu Pool Gate

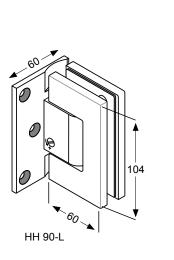
Gate Hinge

SKU Reference: 300781, 300782, 300780, 300779



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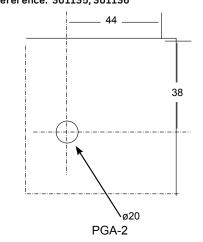
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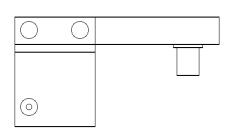
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Pool Gate Latches

Glass to Glass patch Pool Gate Pivot Arm SKU Reference: 301135, 301136

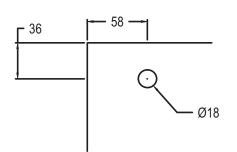


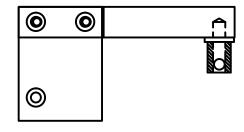


Pool Gate Latches

Ozone Glass to Glass Pool gate Pivot Arm SKU Reference: 301137

PGH - 2 Top pivot arm 180°



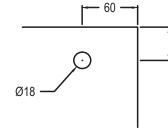


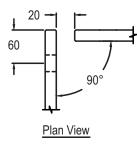
Pool Gate Latches

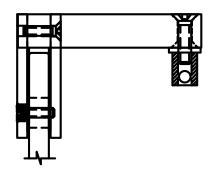
Ozone 90° Glass Mount to Patch Pool Gate Pivot Arm SKU Reference: 301140

- 36

PGH - 6 Top pivot arm 90°



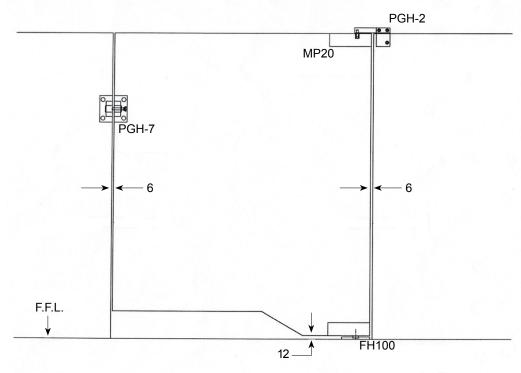






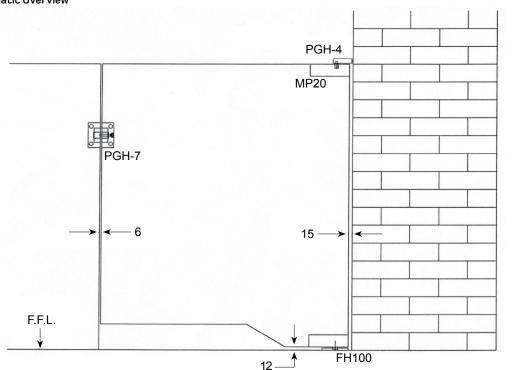
Pool Gate Latches

Glass to Glass Gate Typical Schematic Overview



Pool Gate Latches

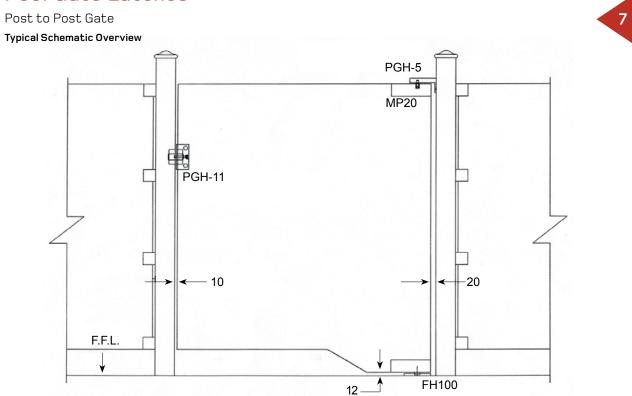
Wall to Glass Gate
Typical Schematic Overview



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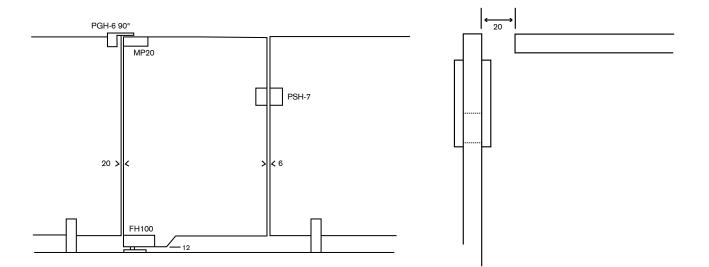


Pool Gate Latches



Pool Gate Latches

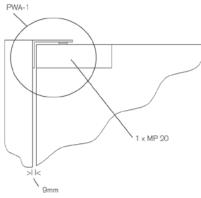
Glass to Glass Gate 90° Typical Schematic Overview

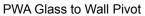


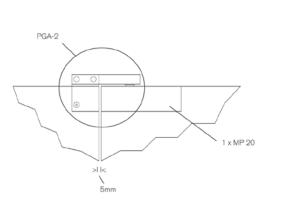


Pool Gate Latches

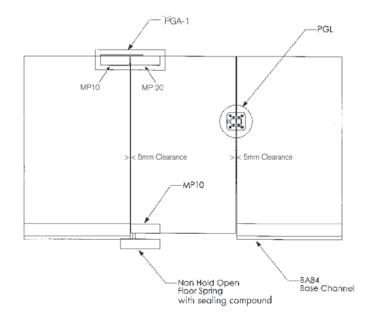
Glass to Glass Gate Typical Schematic Overview

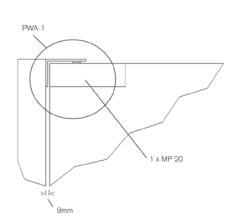


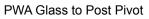


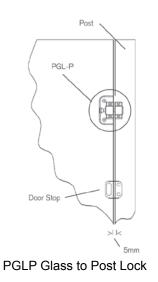


PGA-2 Glass to Glass Pivot

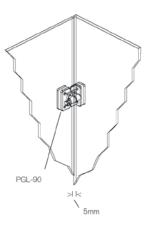








PGA-1 & PGL Glass to Glass Pivot and Lock



PGL-90 Glass to Glass Lock

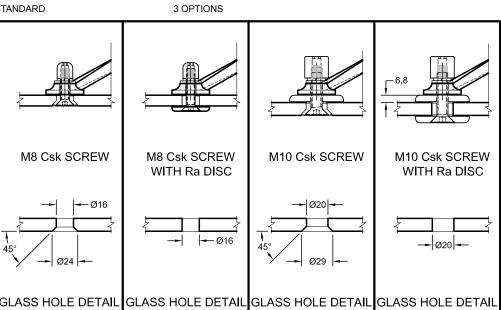


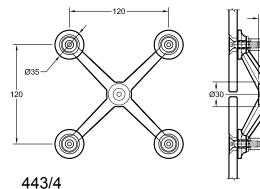
Lightweight 443

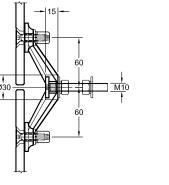
For SKU selection please see Spider section 8, 9 & 10

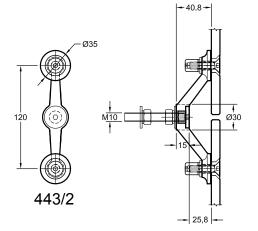
(Frameless Glass Canopies/Spider Commercial Facades/Spider Glass Stairs & Floors)

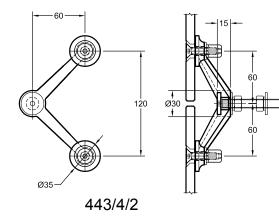


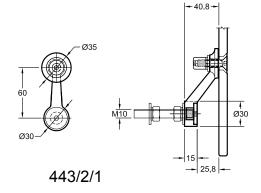












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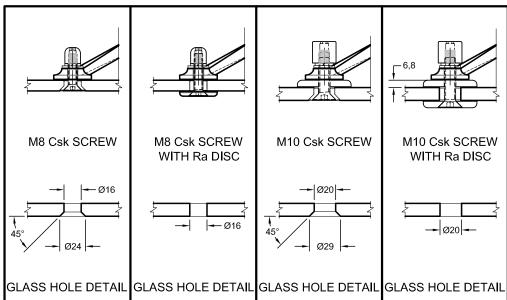


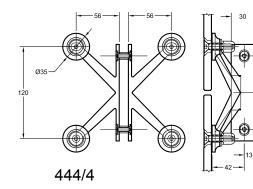
Lightweight 444

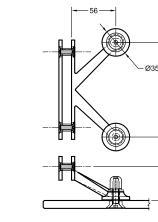
For SKU selection please see Spider section 8, 9 & 10 (Frameless Glass Canopies/Spider Commercial Facades/Spider Glass Stairs & Floors)

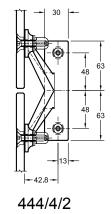
3 OPTIONS

STANDARD



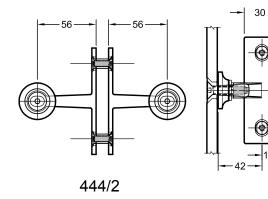


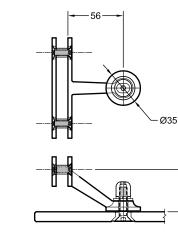


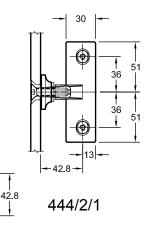


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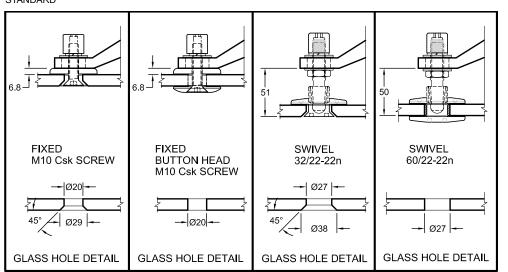
Heavy Duty 445

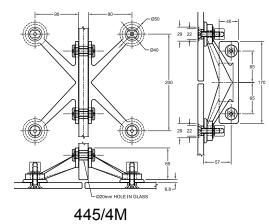
For SKU selection please see Spider section 8, 9 & 10

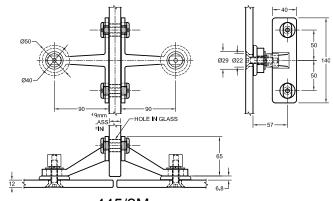
(Frameless Glass Canopies/Spider Commercial Facades/Spider Glass Stairs & Floors)

GLASS FIXING OPTIONS STANDARD

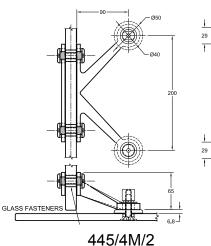
3 OPTIONS

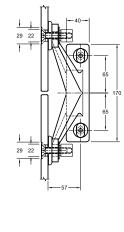


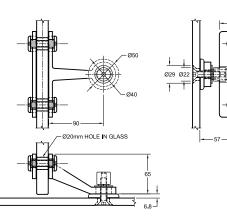




445/2M







445/2M/1





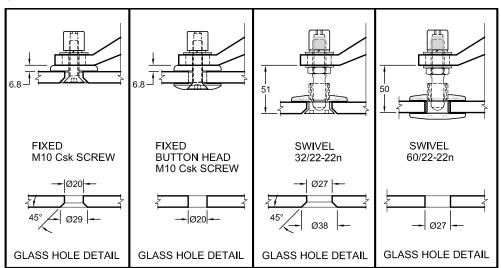
Heavy Duty 445/446

For SKU selection please see Spider section 8, 9 & 10

(Frameless Glass Canopies/Spider Commercial Facades/Spider Glass Stairs & Floors)

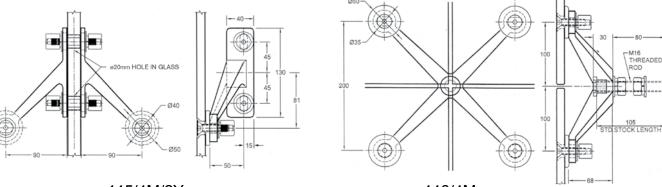
GLASS FIXING OPTIONS STANDARD





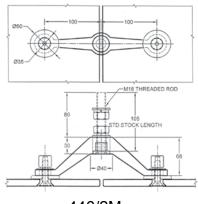


12



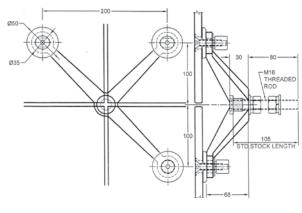
445/4M/2Y





446/2M

www.metroglass.co.nz



446/4M/3





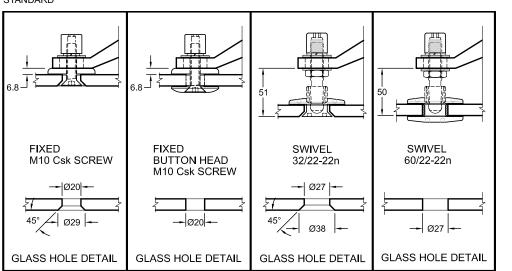
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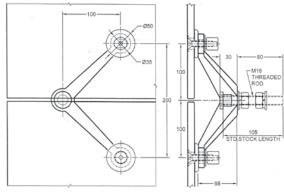
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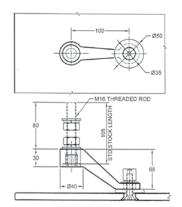
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3 OPTIONS

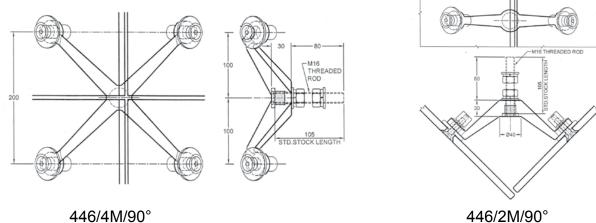








446/2M/1



446/2M/90°



10

9

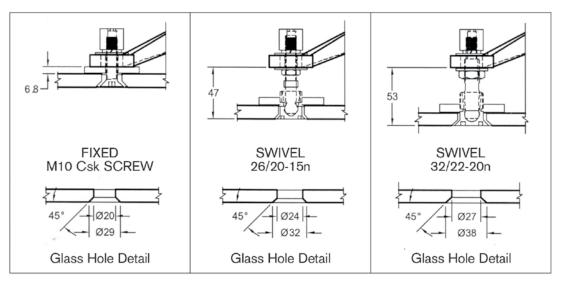


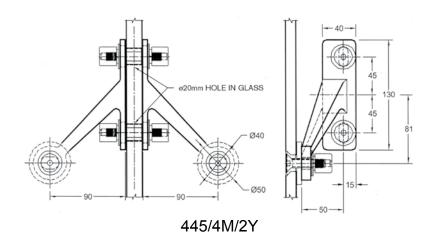
Heavy Duty 445/4M/2Y

For SKU selection please see Spider section 8, 9 & 10 (Frameless Glass Canopies/Spider Commercial Facades/Spider Glass Stairs & Floors)

FASTENER TYPES

3 OPTIONS







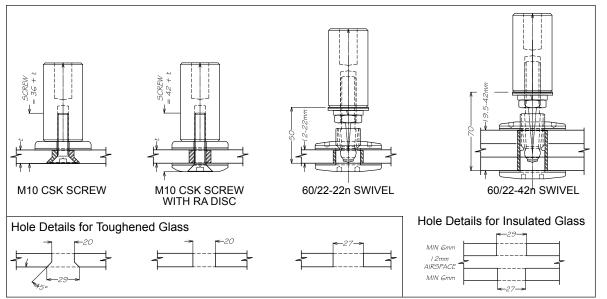


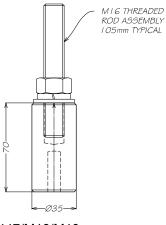
Heavy Duty 445/4M/2Y

For SKU selection please see <mark>Spider section 8, 9 & 10</mark> (Frameless Glass Canopies/Spider Commercial Facades/Spider Glass Stairs & Floors)

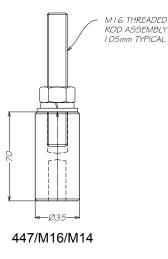


Typical Fixing Options







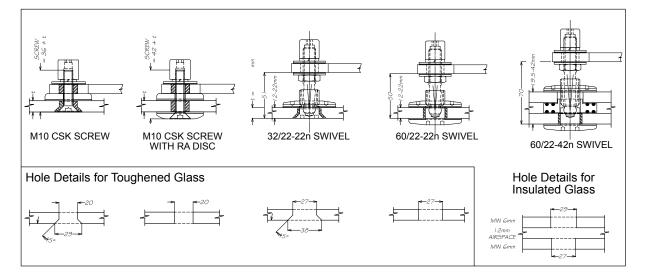


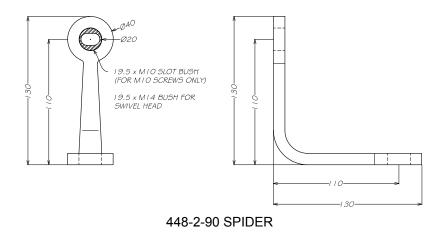


Heavy Duty 445/4M/2Y

For SKU selection please see Spider section 8, 9 & 10 (Frameless Glass Canopies/Spider Commercial Facades/Spider Glass Stairs & Floors)

Typical Fixing Options





8





HARDWARE WARRANTY

Metropolitan Glass and Glazing Limited and its subsidiaries (including Metro Performance Glass) ("MPG"), warrants its products to comply with the New Zealand Building Code as it applies to hardware subject to the conditions below:

- 1. All works using the Metro Hardware are carried out in accordance with the site specific installation instruction requirements and MPG literature.
- Where a Site Specific PS1 is required it is approved and signed off by MPG prior to the commencement of installation;
- 3. The exclusions set out below.

In addition MPG warrants for 10 years that the hardware

- a. Is fit for all purposes for which it is commonly supplied; and
- b. is acceptable in appearance and finish to the extent of the specifications attached to the product type (eg powder coating, anodising and so on);
- c. all product is safe and durable to meet the requirements of the NZ Building Code.

Mechanical or Electrical hardware carries a different warranty period to that stated above. In this instance MPG warrants the listed products for 5 years.

- d. All Ozone product,
- e. All Mechanical hinges,

f. Metro MFX840 Floor Spring,

g. All Dormakaba Floor Springs.

Subject to the terms of this warranty, the Company will either repair or replace any products which are defective, and it may require that the said products are returned to MPG (*freight prepaid). The Company reserves the right to inspect the installation of defective products in situ (ie in the field) to determine if there is a valid claim.

What does this warranty exclude?

The warranty shall not apply where any one or more of the following circumstances exist and MPG will not be liable under the warranty for any loss caused as a result of:

- a) Any act of default or omission of, or any representation made by or any person other than Metropolitan Performance Glass or the employees or agents of Metropolitan Performance Glass;
- b) Improper handling or failure to follow MPG instructions regarding the Product.
- c) Improper usage.
- d) Failure of product on account of faulty installation, building construction or design. Any defect attributable to a defect in the structure to which the hardware has been affixed or due to incorrect installation.
- e) Glass Breakage (Other than that specifically implied and contained within specific Glass Warranties) attributable to the various glass types MPG supply.

- f) Any defect in materials which are covered by any other supplier warranty.
- g) Any damage or deterioration arising from causes beyond the control of the MPG, including but not limited to impact, abrasion, earthquake, flood, mechanical damage, neglect, malicious damage, misuse, fire damage, act of God, pollution, abnormal weather, damage caused by geothermal gases, air pollution or severe coastal conditions, excessive heat, exposure to chemicals, or attempted repairs unauthorised by MPG in writing.
- h) Any defect caused by a failure to regularly maintain the surfaces in accordance with the recommended care and maintenance procedures as set out in this document or any additional suppliers care and maintenance requirements.
- i) Hardware that looks similar to MPG hardware but was not in fact supplied by MPG.
- j) 'Fair wear and tear' as defined in the care and maintenance document as attached.
- k) Failure to comply with the care and maintenance document (as attached).
- MPG is not liable for any direct or indirect special, consequential or third party claims for loss, damage or expenses.
- m) This warranty is not assignable or transferable to subsequent owners without the prior written consent of the MPG.
- n) The liability of MPG shall not exceed the original invoice value of the applicable hardware product at fault (to be looked at – considered?).
- o) No liability shall arise where the purchase price for any product supplied remains unpaid (in part in full), or where the customer is otherwise in default of the terms of the supply agreement.
- p) No liability shall arise unless a claim is made in writing to MPG within 30 days of the defect arising or being reasonably discoverable by the purchaser.

This warranty does not limit or affect any rights a purchaser may have under the Building Act 2004, Fair Trading Act 1986, the Consumer Guarantees Act 1993 ("CGA") and any other applicable statute.

However , where hardware / glass is supplied for the purpose of business, the guarantees contained in the CGA do not apply. Further, if the Customer on-sells the goods it will contract out of the CGA (and any other consumer law) to the extent permissible by law effectively and in writing wherever the goods are on-sold for the purposes of the Customer's business. For buyers who re-supply the products/glass in trade, Cl 8. of the Metro Performance Glass Standard Terms and Conditions of Trade of will apply in full.

Metro Performance Glass reserves the right to inspect in the field any hardware or glass which is alleged to be defective and which is subject to a claim under this warranty or under any applicable statute including the Consumer Guarantees Act 1993.



Care and maintenance of Metro Performance Glass Hardware

Hardware requires regular maintenance to ensure the system performs at its best. As a general rule, the harsher the environment, the more regular the maintenance required to keep your hardware in top condition. Also hardware or systems that are covered by verandas or wide eaves and not subject to natural rain wash needs regular cleaning to avoid damage to surface finish on both the aluminium and any surface coated hardware.

Fair wear and tear;

The following maintenance tasks are not covered by this warranty:

- Seals and rubbers will require replacing from time to time depending on the environment. As a general rule, they should last for 10 years or more, and can be replaced by service provider.
- **Tracks, rollers** (if accessible) and hardware require lubrication; rollers may require replacing due to normal wear and tear. This depends on the environment and amount of use.

Care and maintenance, washing glass

Regular washing and drying of glass windows and doors are required to ensure their long term durability. In urban areas washing should be done every three to six months.

The following guidelines apply:

- a. When washing, soak the glass surface with warm water and a mild soap detergent solution or proprietary glass cleaners to loosen dirt and debris.
- b. Use a soft grit free cloth or sponge when washing and try to avoid washing In direct sunlight. Do not use scrapers or razor blades.
- c. After washing, rinse with clean water and then dry the glass using a clean, grit-free squeegee, cloth, or paper towel. Remember, wet glass is dirty glass.
- d. All water and cleaning solution residue should be dried from the window gaskets, sealants, and frames to prevent water spots.
- e. Avoid cleaning tinted and reflective glass surfaces in direct sunlight. When washing special glass, the following guidelines apply:
 - i. When washing double glazing and laminated glass, use the same procedures as above but ensure no solvents come into contact with the edge laminate interlayer or unit sealant.
 - ii. With reflective or Low E coated surfaces, exercise special care when cleaning - special cleaners may be required as they can be hard to clean. Follow manufacturer's instructions.
- f. It is advisable to check that frame drainage is not blocked this can affect laminate and insulated glass units.

Ezyclean glass surface coating technology

Simple maintenance: A soft cloth is all you really need to clean your protected glass, but for best results, squeegee dry after each use. The only cleaning solution Metro recommends using is warm water and mild detergent.

- Provided the glass is maintained according to published aftercare instructions and without the use of abrasive cleaning methods or highly alkaline products, Metro Performance Glass warrants that Metro EzyClean Technology will work for up to ten (10) years from the date of manufacture.

Dos and don'ts summary;

DO NOT:

- Do Not Use scrapers of any type or size on a glass surface.
- Do Not Leave building dirt or residues to remain on glass for a period of time.
- Do Not Begin cleaning glass until you have identified the surface type.
- Do Not Clean glass surfaces in direct sunlight.
- Do Not Allow dirty water or cleaning residues to remain on the glass.
- Do Not Begin cleaning before rinsing off loose residues.
- Do Not Use abrasive cleaning solutions, materials or solvents.
- Do Not Allow metal parts of the cleaning equipment to come in contact with the glass.
- Do Not Trap abrasive particles between the cleaning material and the glass.

DO:

- Clean glass promptly when dirt or building residues appear.
- Determine glass surface type.
- Exercise special care when cleaning coated surfaces.
- Avoid cleaning glass surfaces in direct sunlight.
- Start cleaning at the top of a building, then continue to lower levels.
- Soak the glass surface in a clean soapy solution before cleaning.
- Use a mild non abrasive commercial cleaner.
- Use a squeegie to remove all cleaning solution.
- Try your procedures on a small window and check.
- Caution other trades regarding the care and protection of the glass surfaces.

Care and maintenance of powdercoating

Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years. The powder coating surface warranty period is conditional upon the formulation and micron thickness. Over time with exposure to the elements, powder coatings may show signs of weathering such as loss of gloss, chalking and slight colour change. A simple regular clean will minimise the effects of weathering and will remove dirt, grime and other build-up detrimental to all powder coatings.

 MPG uses Orica's Dulux Duralloy[®] and Duratec[®] architectural powder coatings in most instances, as well as AkzoNobel's Interpon D1000, Interpon D1010 Premium Residential, Interpon D1010 Premium Commercial, Interpon D2015 Ultriva[™], Interpon D3020 Fluoromax[®] which can all be specified upon request. Different warranty periods for both film and colour integrity for all exterior and interior applications apply.

The frequency of such cleaning will depend on many factors including the:



- Geographical location of the building.
- Environment surrounding the building e.g. marine, industrial, alkaline or acidic, etc.
- Levels of atmospheric pollution including salts.
- Prevailing winds and the possibility of air borne debris causing erosive wear of the coating e.g. sand causing abrasion.
- Protection of part or all of the building by other buildings.
- Change in environmental circumstances during the lifetime of the building e.g. if rural became industrial.

The following guidelines apply:

- g. Just a gentle clean with a soft brush and mild detergent, followed by a fresh water rinse, will maintain the long-term performance of the powder coated or anodised aluminium. In rural or normal urban environments cleaning should occur every six months. In areas of high pollution, such as industrial areas, geothermal areas or coastal environments, cleaning should occur every three months. In particularly hazardous locations, such as beachfronts, severe marine environments or areas of high industrial pollution, cleaning should be increased to monthly.
- h. Sheltered areas can be at more risk of coating degradation than exposed areas. This is because wind-blown salt and other pollutants may adhere to the surface. These areas should be inspected and cleaned if necessary on a more regular basis.
- i. Adequate on site protection of delivered and/or installed hardware must be provided. Hardware may get knocked, scratched, or splattered with mortar, plaster, or paint during the later stages of construction. If splashes occur immediately wash down the hardware unit affected with water or methylated spirits* (*wash area thoroughly afterwards). Do not allow splashes to harden.
- j. To restore powder coated surfaces that have lost gloss or are chalking, polishing with a high quality crème polish in accordance with the manufacturer's instructions is recommended. Avoid polishes that contain cutting compounds, unless the surface is extremely weathered.

DO NOT USE SOLVENTS Strong solvent type cleaners should not be used. These are harmful to the extended life of your hardware system.

Care and maintenance of anodising

Anodised hardware is not only attractive, but also offers a durable and tough wearing finish. Some deterioration of the anodic oxide coating may occur, mainly as a result of grime deposition and subsequent attack by moisture, particularly if the moisture is contaminated with sulphur compounds.

Regular cleaning is essential to preserve the finish of anodised aluminium over a long period. The following guidelines apply:

k. Anodised aluminium should be washed with warm water and a suitable wetting agent or mild soap solution, in a similar manner to washing a car. A fine brush may be used to loosen dirt or grime. The use of anything stiffer or more abrasive may result in damage to the surface. Acid or alkali cleaners should not be used, as these will damage anodic films and may discolour coloured hardware.

- I. Where greasy deposits or hard to remove grime is present, the anodising may be cleaned with a soft cloth dipped in white spirit, turpentine, kerosene, or a mild liquid scourer, followed by wiping it with a dry rag. However, the cleaner must ensure none of these solvents come into contact with other parts of the system. All solvents must be kept from contact with the Santoprene glazing gasket materials (the "rubber" seal around the glass), as most solvents will damage them.
- m. It is essential to rinse anodised aluminium thoroughly with copious applications of clean water after cleaning, particularly where crevices are present, and then dry the glass to prevent water spots.

Regularly washing anodised hardware will ensure a long lasting product. In general, the following programme is recommended:

- Rural environments: every six months.
- Urban environments: every three months.
- Industrial and marine environments: every six months, as well as a monthly cold water wash.

For additional protection, especially in harsh environments, waxing with a good quality car wax after washing will assist in lifting and maintaining the appearance of your anodised hardware.

Damage to anodised surfaces may occur during building. Painters may accidentally splash paint on newly installed windows and doors, marring their appearance. The cleaner must act quickly and remove such splashes with a soft cloth moistened with water. Using water based paints allows the cleaner to clean with water – using solvents may put your hardware at risk.

Care and maintenance of stainless steel

Stainless steel is used for fittings and hardware by Metro Frameless Glass (MFG) for its strength, aesthetics, and its inherent high level of corrosion resistance.

MFG uses predominately 316 Grade Stainless Steel (also known as Marine Grade stainless) hardware for external applications such as balustrades, pool fences, canopies and spider walls, but many of the entry door patch fittings and handles use 304 Grade. In some special cases the higher strength 2205 duplex grade is used by MFG.

The design of our frameless glass systems and installation techniques are intended to make the systems as maintenance free as possible, but there are still maintenance procedures, associated with any exposed structure, that must not be overlooked. Stainless Steel is called so as it is less prone to staining. It is important to recognize that the material is not impervious to mild staining or even corrosion in some instances. The likelihood and severity of staining is a product of exposure to marine salts and other corrosive materials which can affect installations even 20km inbound from coastal areas.

Pollen and other airborne matter can also contribute to corrosion so there no areas of New Zealand where the topic can be ignored. The smoother the surface is, the less prone to discoloration.



Stainless steel may be discoloured from corrosion;

- If used in areas where rain does not wash the fittings.
- If it is exposed to a more aggressive environment than that for which the particular grade of stainless steel is intended, e.g. highly polluted air, salt solutions or residues of cleaning agents containing chlorine.
- If it has a rough surface that enables a corrosive substance to adhere to.
- If the fittings are not cleaned after installation and have oil/acid from hands.
- If the design of the steel component has crevices and narrow gaps.
- If the surface is contaminated or damaged by grinding swarf or other iron particles from tools used in the installation work.
- If fasteners of ordinary steel or dissimilar metals are used for securing the hardware, or if the hardware comes into direct contact with adjacent components made of plain carbon steel in wet or humid conditions (galvanic corrosion).

Light corrosion is often referred to as "Tea Staining" as it is a brown surface discolouration which, although not affecting the material structurally, is none the less unsightly. The likelihood of this occurring can be greatly reduced through the use of 316 Grade, regular cleaning and the use of protective coatings.

The following guidelines apply;

- n. Any stainless steel hardware should be cleaned after installation and before any glass is installed.
- Basic cleaning can be carried out using simple soap solutions or mild detergents applied with warm water (or proprietary cleaners) and a clean non-abrasive cloth. The solution should be thoroughly rinsed off with cold water, and wiped dry with a clean absorbent cloth. Isopropyl alcohol can also be used to clean finger and hand marks.
- p. Avoid bleach, as this can mark the metal surface, and avoid any abrasive applicators - especially a ferrous based cleaning pad, such as steel wool, as this can introduce contamination which reacts with the stainless steel and makes corrosion worse.
- q. Protective coatings are also available that can be easily applied to the hardware which can increase maintenance periods. Information regarding these products is available from MFG. Stainless steel hardware should be cleaned again during the final clean and if possible after any surrounding building work is complete.
- r. If mild tea staining has already occurred, a plastic abrasive pad - "Scotchbrite" for example - can be used, again with warm water and a mild detergent / soap solution. When abrading however, it is important to only rub in one direction which is the same direction as any visible brushed finish. Take care to only rub the steel components, not the glass. A stainless steel rejuvenating paste can also be used and works well in combination with a scotchbrite pad. Information regarding these products is available from MFG.

s. When installation is complete the frequency of a regular cleaning regime will vary according to the installation design and level of exposure, especially in regard to proximity to the sea. In general cleaning should take place 3 to 4 times a year. Protective coatings can prolong the maintenance interval.

Environment	Washing Intervals	
	316 Grade	304 Grade
Clean inland location	6 - 12 months	3 - 6 months
Polluted urban and industrial	6 - 12 months	Unsuitable
Coastal atmosphere	3 - 6 months	Unsuitable

Recommended cleaning methods:

Washing	Method	Comments
Routine cleaning (this is important in Coastal areas)	Soap or detergent and warm water. Or proprietary stainless steel cleaners. Sponge with cloth or soft brush then	Satisfactory on all surfaces. Situations directly on the seafront are best if cleaning monthly. Uneven surfaces
	rinse with clean water and dry.	or surfaces with crevices are prone to trapping corrosion agents.
Fingerprints	Detergent and warm water or organic solvent. Or proprietary stainless steel cleaners.	Satisfactory on all surfaces. To minimise recurrence use a protective coating.
Oil and Grease Marks	Organic solvent, e.g. acetone	Satisfactory on all surfaces. To minimise recurrence use a protective coating.
Stubborn Spots Stains Light Discolouration Hard Water Spots Scale and General Water Marks	Mild abrasive detergents rinse and dry.	Use a stainless steel rejuvenating paste and protective coating.
Heavy Discolouration	Mild abrasive detergents rinse and dry. A plastic abrading pad and or paste can be used with care.	Use a stainless steel rejuvenating paste and protective coating.



In summary:

- Cleaning should be thorough and at a frequency to suit the environment.
- Wash with warm water and mild detergent or soap solution or use proprietary stainless steel cleaners.
- Rinse thoroughly with clean cold water and dry.
- Do not use harsh abrasive cleaners and especially no wire wool or similar ferrous scourers.
- If mild corrosion is present, then a mild abrasive detergent or rejuvenating paste can be used with a warm mild solution and fully rinsed with clean cold water.
- Heavier levels of staining can be removed with a light plastic abrading pad (such as Scotchbrite) rubbing must only be in one direction with that being as per any visible surface finish. This is best done with a rejuvenating paste. Use protective coatings after cleaning.
- Be careful to ensure cleaners do not effect fibre or other fitting gasket materials.

Care and maintenance of handles / mechanisms

Periodic maintenance of handles / mechanisms is essential, this includes locks, handles, hinges, levers, rollers, bolts, etc. This applies particularly to mechanisms with moving parts that require lubrication. Before doing any cleaning or maintenance, you must establish exactly what hardware has been installed and how it has been constructed.

Lubrication for Mechanisms;

Mechanisms include hinges, cylinders, locks, rollers and fasteners. You can keep these mechanisms in good working order through regular cleaning and lubrication.

t. MPG recommend a Teflon-based lubricate or please refer to the manufacturer's care instructions. A soft bristle brush can be used on exposed parts. Apply Teflon-based lubricate to the moving parts – you don't need to use very much. This will limit corrosion of the exposed metals. MPG advise to do this once every two months. If, however your hardware is near the sea or exposed to salt air, we recommend you lubricate the components once every month.

Electrical Entrance Systems;

Do not let the product get wet.

- 1. Keep clear of debris and general dirt.
- 2. Wipe the keypads or swipe the device with a clean damp cloth.
- 3. Do NOT use solvents.
- 4. Replacement batteries will be required.

Scratches and metal scrapers

Scratches can occur from hard pointed objects or poor handling, but most often occurs from the careless removal of foreign matter from the glass surface. Mortar splatter and paint are common offenders and efforts to remove after hardening almost always lead to surface damage.

u. It is essential that the foreign materials are removed before they harden. Better still, if construction work continues after glazing, that the glazed areas are protected by adhesive plastic films or suitable covers.

- v. One of the common mistakes made by non-glass trades people, including glass cleaning contractors, is the use of razor blades or other metal scrapers on a large portion of the glass surface. Using large blades to scrape a window clean carries considerable risk of causing damage to the glass.
- w. The glass industry, fabricators, distributors and installers neither condones nor recommends any scraping of glass surfaces with metal blades or knives. Such scraping usually permanently damages or scratches the glass surfaces.
- x. When paint or other construction materials cannot be removed with normal cleaning procedures, a new 25mm razor blade may have to be used. The razor blade should be used on small spots only. Cleaning should be done in one direction only. Never scrape in a back and forth motion as this could trap particles under the blade that could scratch the glass. Blades or scrapers can dislodge "pickup" on toughened and heat strengthened glass. There are fine particles of glass that are fused on to the surface during toughening. Once dislodged they can scratch the glass.

Onsite construction / installation protection

Hardware Protection during Installation:

- y. All the activity on a construction site means that your hardware items may get knocked or scratched, splattered with mortar, plaster, textured coating or paint during the later stages of construction.
- z. Please ensure that all hardware articles are masked or covered at this time. It is far easier to prevent accidents than to try and correct them. Should your hardware receive mortar or paint splashes see that these are removed before cure and follow the instructions outlined above.

For further information, please refer to the PS1 or MPG instructions and guidelines on our websites.





Powdercoating

Metro frameless glass offers a vast variety of powder coating options with a quick turnaround. Powder coating is available in a wide range of colours with commercially available surface integrity warranties from 10 to 30 years.

- $Metro\ uses\ a\ range\ of\ colour\ products\ and\ finishes\ designed\ by\ Dulux\ that\ suits\ most\ applications.$
- ▶ Duratec®
- ► Duralloy®

Metro also uses AkzoNobel's Interpon D architectural powder coatings range in some instances:

- ▶ Interpon D1000
- ▶ Interpon D1010 Premium Residential
- ▶ Interpon D1010 Premium Commercial
- ► Interpon D2015 Ultriva™
- ► Interpon D3020 Fluoromax®

POWDER COATING MATERIALS

Project	Environment	Recommended Project	
Multistorey Prestigious	Standard	Duratec®	
Multistorey Commercial or Industrial	Marine	Duratec®	
Multistorey Commercial or Industrial	Standard	Duratec®	
Multilevel Building under 3 levels	Marine	Duratec®	
Multilevel Building under 3 levels	Standard	Duratec [®] or Duralloy [®]	
Educational-School Single Level	Marine	Duratec®	
Educational-School Single Level	Standard	Duralloy® or Duratec®	
Residential	Marine	Duratec®	
Residential	Standard	Duralloy®	





Formulated to meet:

AS 3715-2002, AS 4506-2005 and AAMA 2604.

Duratec[®] is a thermosetting TGIC free powder coating designed specifically for architectural applications where colour and gloss retention is critical. Duratec[®] is formulated with advanced polyester resin technology and high performance pigments to conform to the performance requirements of AAMA 2604. It has superior gloss and colour retention compared with standard polyester powder coatings. Duratec[®] has been developed for use on architectural aluminium, including window and door frames, panel work and other exterior metal features on commercial buildings.

- Supported by a 20 year durability warranty* on pre-treated architectural aluminium when applied by a Dulux Registered Applicator
- Suitable for developments further than 10 metres from salt water
- Durable polyester
- Excellent colour retention
- Smooth film appearance
- ► Hard wearing/serviceable finish

Architectural Aluminium Applications

Surface Preparation for Architectural Aluminium In accordance with AS 3715-2002 Metal finishing – Thermoset powder coating for architectural applications of aluminium and aluminium alloys or AAMA 2604 – Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminium Extrusions and Panels.

How to Specify for Architectural Aluminium

Example – (Dulux Duratec® St. Elmo's Fire 9007208K) to meet AAMA 2604. Product must be applied by a Dulux Registered Aluminium Applicator and must offer 20 year durability warranty.

Other Metal Applications

Surface Preparation for Other Metal Substrates

In accordance with AS 4506-2005 Metal finishing – Thermoset powder coatings. Refer to Table 2.1 for appropriate pretreatment for various substrate metal surfaces such as Steel (Bright, Semi Bright), Steel (Zinc Coated) and Stainless Steel. The appropriate pre-treatment option will vary according to atmospheric classification as set out in AS 4506-2005 Metal finishing – Thermoset powder coatings (Appendix G).

How to Specify for Other Metal Substrates

Example – Powder Coating of (Components to be coated) (Atmospheric Classification) (Substrate) with (Dulux Duratec® St. Elmo's Fire 9007208K) to meet AS4506-2005. Compliance to this standard must be demonstrated through provision of a certificate from the coating applicator outlining the relevant, "atmospheric classification, substrate and method of chemical or mechanical surface preparation".

*Subject to the terms and conditions of the relevant product warranty. Please contact your local Dulux representative or Customer Service Team for further details.



DURALLOY® POWDER COATING

Formulated to meet:

AS 3715-2002, AS 4506-2005 and AAMA 2603.

Duralloy® is a tough thermosetting powder coating that exhibits decorative and durable characteristics suitable for a broad range of interior and exterior product applications where excellent overall performance is required. Duralloy® has been formulated especially for residential developments and buildings that are up to 3 floors from the ground.

- Supported by a 10 year durability warranty* on pre-treated architectural aluminium when applied by a Dulux Registered Applicator.
- Suitable for developments further than 100 metres from salt water.
- Extensive colour and gloss range available.
- Guaranteed performance on appropriately pre-treated aluminium.
- Excellent colour retention.

Architectural Aluminium Applications

Surface Preparation for Architectural Aluminium In accordance with AS 3715-2002 Metal finishing – Thermoset powder coating for architectural applications of aluminium and aluminium alloys or AAMA 2603, Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminium Extrusions and Panels.

How to Specify for Architectural Aluminium

Example – (Dulux Duralloy® LSG Matt Ironsand 9158096M) to meet AAMA 2603. Product must be applied by a Dulux Registered Aluminium Applicator and must offer a 10 year durability warranty.'

Other Metal Applications

Surface Preparation for Other Metal Substrates

In accordance with AS 4506-2005 Metal finishing – Thermoset powder coatings. Refer to Table 2.1 for appropriate pre-treatment for various substrate metal surfaces such as Steel (Bright, Semi Bright), Steel (Zinc Coated) and Stainless Steel. The appropriate pre-treatment option will vary according to atmospheric classification as set out in AS 4506-2005 Metal finishing – Thermoset powder coatings (Appendix G).

How to Specify for Other Metal Substrates

Example – Powder Coating of (Components to be coated) (Atmospheric Classification) (Substrate) with Dulux Duralloy® LSG Matt Ironsand 9158096M) to meet AS4506-2005. Compliance to this standard must be demonstrated through provision of a certificate from the coating applicator outlining the relevant, "atmospheric classification, substrate and method of chemical or mechanical surface preparation". *Subject to the terms and conditions of the relevant product warranty. Please contact your local Dulux representative or Customer Service Team for further details.



OUR MATERIALS

Which Grade of Stainless Steel Should I choose?

There are many different grades of Stainless Steel. The most common are 304 and 316. However, Metro also supply some items in 2205.

Type of Stainless Steel	Stainless Grade	Features and Benefits	Useful For	In Action
Austenitic	304	A general purpose grade. It is commonly used because it offers reasonable corrosion resistance and is reasonably priced.	A variety of applications, including interior and non-costal exterior applications which are hidden from sight (as may tea-stain)	Interiors, Non Costal Exterior.
Austenitic	316	Sometimes referred to as the 'Marine Grade' because of its excellent corrosion resistance (Better than 304)	Boat and marine applications, and exterior near the coast (within 5km)	Marine environments.
Duplex	2205	Duplex Stainless Steel – High strength properties and greater corrosion resistance.	Situations requiring high strength and resistance to corrosion cracking.	Marine Environments, Critical Engineering applications.

Note: The key word with Stainless Steel is that it is stain 'less' but not completely corrosion-proof as is commonly thought. Regular care and maintenance schedules need to be maintained to keep product looking good and performing at its best.

> This information is provided as a Guide Only. Metro does not accept liability for the application of this information.

Why is stainless steel corrosion resistant?

Stainless steel is a solid metal and is not just a coating applied to steel. The chromium in the stainless steel combines with oxygen in the normal environment to form a 'Chromium Oxide' or a passive film layer on the surface. This protects the iron in the steel from being attacked by corrosive agents (i.e. salt) and creating rust.

ELECTRO PLATING / POLISHING

Electroplating is primarily used to change the surface properties of an object (such as abrasion and wear resistance, corrosion protection) it may also be used to build up thickness on undersized parts.

Electopolishing is an electrochemical process that removes material from a metallic item, reducing the surface roughness by levelling micro-peaks and valleys, improving the surface finish. It is used to polish, passivate, and deburr metal parts. It is often described as the reverse of electroplating. Electro polishing or passivating (forms of acid treatment) improves corrosion resistance. All stainless steel products can be electro polished upon request.





METRO FRAMELESS GLASS -SERVICE OFFER (GUIDE)

Standard Stocked Items:	1- 3 working days (Standard Delivery) from order placement
Oversize Items:	3-5 working days (Standard Delivery) from order placement (Greater than 3m in length)
Powder coated Items:	5-7 working days (Additional) Additional surcharges as a % apply for Powder coating dependant on selection.
Anodised Items:	7-10 working days (Additional)
Electroplating:	5-7 working days (Additional)
Polishing:	3 working days (Additional)
Custom or Specific Engineering:	TBC at time of order placement with Customer Service Department. Includes items requiring specific drawings / testing / PS1's / assembly and/or manufacture (Rails / Frameless Posts etc.)
International Orders:	TBC at time of order placement with Customer Service Department.

***Note:** Commercial quantities may incur additional required lead-times dependent upon processing times involved in dispatching the order and/or outsourced requirements.

