



MODERN FRAMELESS GLASS SYSTEMS

1 Test sample description

1.1 General

Product Code/Name	150SFUS
Test Requirements	AS/NZ 1170
Date of test	04/11/2019

1.2 Barrier/Glass

Glass make up	Refer to Panel layout
Glass panel size	Height – 1200mm Width - 1000mm
Overall size	Height – 1200mm Width – 1000mm
Handrail used	No Handrail
Glass Grips / Clamping Plates	Refer to Panel Layout

1.3 Spigot System: 150SFUS

Material	Stainless Steel 2205 Duplex
Overall Size	150mmH x 48mmW x 88.6mmW
Drawing supplied	Yes
Fixing method	M12 316 Stainless steel bolts

2.1 General Notes

- 1 – This product was tested for Certification as a Balustrade Assembly only. Fastening the 150SFUS Spigot to the support Structure is a site condition and installers must ensure that the fasteners are adequate to resist the required design loads.
- 2 – The material to which the glass supports are being fastened must adequately resist the design loads.
- 3 - Using different glass thickness for each load category, the glass must be to equal strength or greater than what has been tested in this report.

3.1 BALUSTRADE DESIGN COMPLIANCE

This product was tested to comply with the following Australian Standards.

Australian Standards AS1288–2006 “Glass in Buildings – Selection and installation”

This Standard sets out procedures for the selection and installation of glass in buildings, subject to wind loading, human impact, and special applications such as overhead glazing, balustrades and glass assemblies. Glass strength requirements are given for glazing, based on the tensile stresses developed on the surface of the glass.

Australian Standards AS/NZS 1170.0: 2002 - “Structural Design Actions – General Principles”.

This Standard specifies general procedures and criteria for the structural design of a building or structure in limit states format. It covers limit states design, actions, combinations of actions, methods of analysis, robustness and confirmation of design. The Standard is applicable to the structural design of whole buildings or structures and their elements.

Australian Standards AS/NZS 1170.1: 2002 - “Structural Design Actions – Permanent, imposed and other actions”.

This Standard specifies permanent, imposed, liquid pressure, ground water, rainwater ponding and earth pressure actions to be used in the limit state design of structures and parts of structures. Provides design values of permanent, imposed and other actions to be used in the limit state design of structures and members. It is intended to be used in conjunction with AS/NZS 1170.0.

Australian Standards AS/NZS 1170.2:2011 - “Structural Design Actions – Wind Action”.


This Standard sets out procedures for determining wind speeds and resulting wind actions to be used in the structural design of structures subjected to wind actions other than those caused by tornadoes.

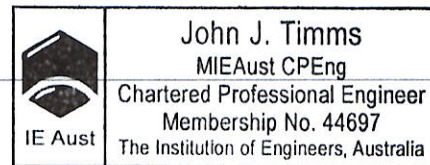
Spigot System: 150SFUS

Tested By: Reece Austin

Signature: 

Witnessed By: John Timms

Signature: 



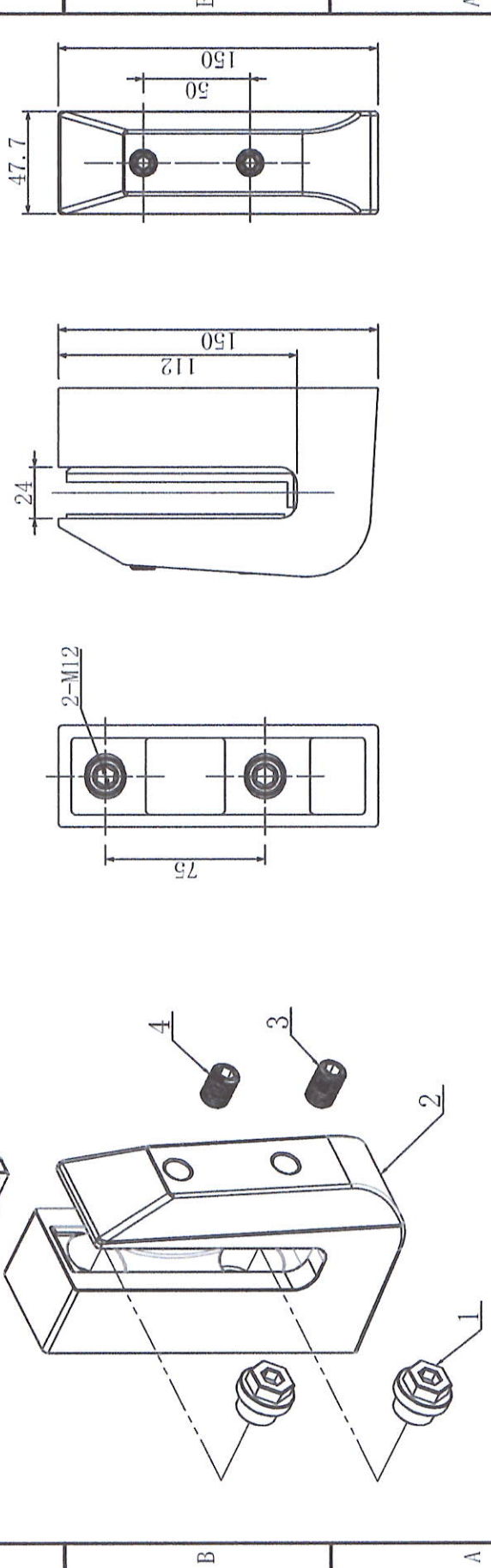
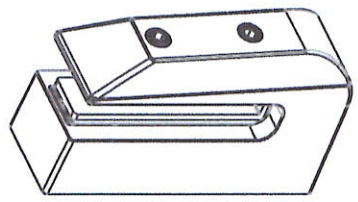
Date: 14/01/2020

MINIMUM IMPOSED ACTIONS FOR BARRIERS

Product: 150SFUS		Glass Thickness			
Type of occupancy for part of the building or structure	Specific uses	Horizontal uniformly distributed line load KN/M	15mm	17.52mmS GP	
(A) Domestic and residential activities	All areas within or serving exclusively one dwelling including stairs, landings, etc, but external balconies and edges of roofs (see C3)	0.35	✓	✓	
	Other residential, (see also C)	0.75	✓	✓	
(B, E) Offices and work areas not included elsewhere including storage areas	Light access stairs and gangways not more than 600mm wide	0.22	✓	✓	
	Fixed platforms walkways, stairways and ladders for access	0.35	✓	✓	
	Areas not susceptible to overcrowding in office and insitutional buildings also industrial and storage buildings	0.75	✓	✓	
(C) Areas where people may congregate					
(C1/C2) Areas with tables or fixed seating	Areas with fixed seating adjacent to a balustrade, reastrants, bars, etc.	1.5	✗	✗	
(C3) Areas without obstacles for moving people and not susceptible to over-crowding	Stairs, landings, external balconies, edges of roofs, etc.	0.75	✓	✓	
(C5) Areas susceptible to over-crowding	Theatres, cinemas, grandstands, discotheques, bars, auditoria, shopping malls (see also D), assembly areas, studios, etc	3.0	✗	✗	
(D) Retail Areas	All retail areas including public areas of banks/building societies (see C5 for areas where overcrowding may occur	1.5	✗	✗	
F/G Vehicular	Pedestrian areas in car parks including stairs, landings, ramps, edges of internal floors, footways edges of roofs	1.5	✗	✗	

Number	Part name	Description	Quantity
1	150SFUS -SN	Nut	2
2	150SFUS -01		1
3	M12x18mm	Grub screws	1
4	M12x16mm	Grub screws	1
5	TL7240SSPI		1
6	TL7240PI		1
7	TL8242PL		1
8	TL7240SSPL		1

NOTE: Suitable for 12-17.52mm glass;
 Need to choose the packer to suit glass size.



Drawing Spec. A4		WEIGHT(KG)	2.773	Drawn by	Jenny	Drawn NO.	150SFUS
Projection		Date	19-05-09	Auditing by		Exploded view	
Version No. F01		RE Date		Approved by			



MODERN FRAMELESS GLASS SYSTEMS

Product test Report


PTY LTD

DATE 14/1/20	PART NO 150SFUS	H/RAIL TYPE N/A
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GLASS TYPE	15mm TOUGHENED GLASS
GLASS SIZE	1000W x 1200H
TEST METHOD	Horizontal loading applied with hydraulic ram
FIXING TYPE, CENTRES	4x M10 THREADED RODS CHEMICAL FIXED
TEMPERATURE	
HUMIDITY	

RESULTS

LOAD KN	DEFLECTION UNDER LOAD	RESIDUAL DEFLECTION	TIME UNDER LOAD	DAMAGE TO PRODUCT	POSTION OF RAMS & LOAD CELLS	PANEL BREAK Y/N
0.5kn	16.13	0	60Sec	NO		N
0.75kn	24.92	0.34	60Sec	NO		N
1.0kn	33.94	0.51	60Sec	NO		N
1.25kn						
1.5kn						
1.75kn						
2.0kn						
2.25kn						
2.5kn						
2.75kn						
3.0kn						
3.25kn						
3.5kn						



John J. Timms
MIEAust CPEng
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SWING TEST	WEIGHT KG	DROP HEIGHT	HIT LOCATION ON PANEL	PASS / FAIL

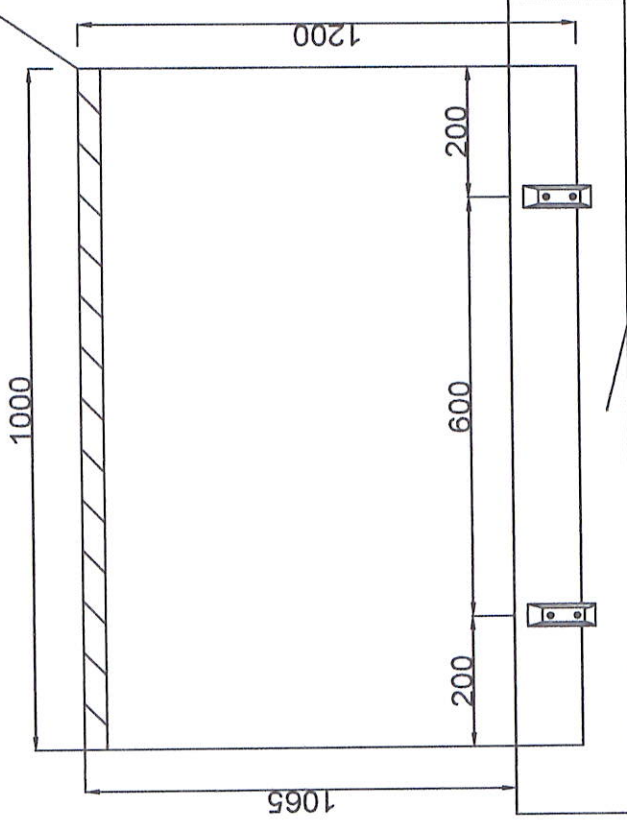
Notes:


Load $0.75 \times 1.46 = 1.095 \text{ KN}$

Deflection = 37.88mm

no damage to product or glass

Uniformed Distributed
 Line Load



	John J. Timms MIEAust CPEng Chartered Professional Engineer Membership No. 44697 The Institution of Engineers, Australia
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Steel Testing
 Platform

Part no: 150SFUS Glass Type: 15mm Toughened Glass

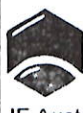
Material: 2205 Duplex Scale:

Fasteners used for testing: 316L SS M12 Bolts

PHOTOS



150SFUS 15mm Toughened Glass

 IE Aust	<p>John J. Timms MIEAust CPEng Chartered Professional Engineer Membership No. 44697 The Institution of Engineers, Australia</p>
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