MFGS

MODERN FRAMELESS
GLASS SYSTEMS

1 Test sample description

1.1 General

Product Code/Name	160BFUS
Test Requirements	AS/NZ 1170
Date of test	14/01/2020

1.2 Barrier/Glass

Glass make up	Refer to Panel layout
Glass panel size	Height – 1000mm Width - 1000mm
Overall size	Height – 1043mm Width – 1000mm
Handrail used	No Handrail
Glass Grips / Clamping Plates	Refer to Panel Layout

1.3 Spigot System: 160BFUS

Material	Stainless Steel 2205 Duplex
Overall Size	160mm H x 82mm W x 42mmW
Drawing supplied	Yes
Fixing method	M10 316 Stainless steel bolts

2.1 General Notes

1 – This product was tested for Certification as a Balustrade Assembly only.
Fastening the 160BFUS 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 then 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: 160BFUS

Tested By: Reece Austin

Signature:

Witnessed By:

Signature:

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Membership No. 44697
The Institution of Engineers, Australia

Date: 14/01/2020

MINIMUM IMPOSED ACTIONS FOR BARRIERS

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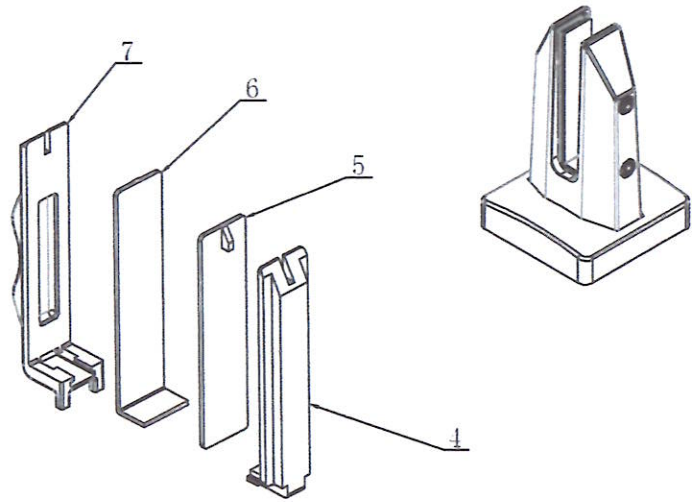
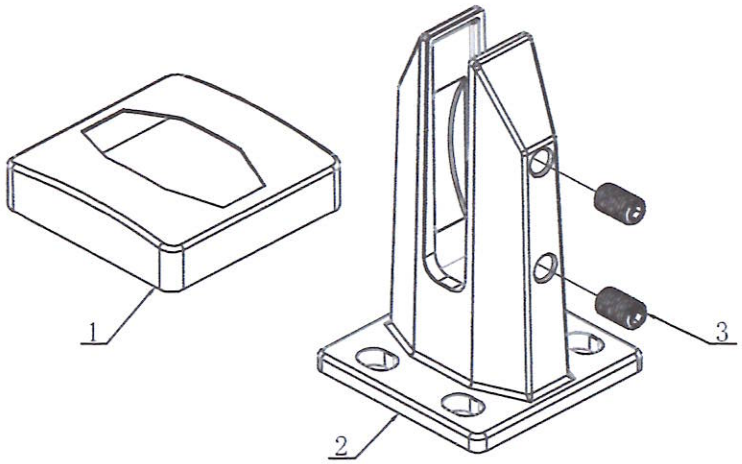
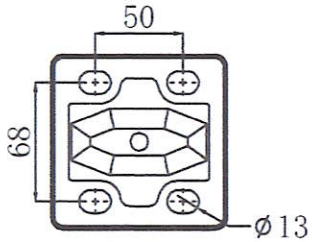
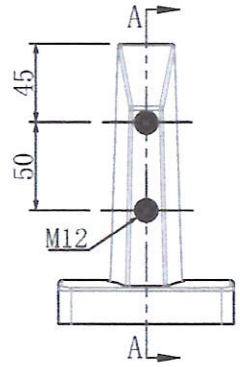
Product: 160BFUS			Glass Size				
Type of occupancy for part of the building or structure	**Specific uses**	**Horizontal uniformly distributed line load KN/M**	**12mm**	**14.28mm SGP**	**15mm**	**17.52mm SGP**	
(A) Domestic and residential activites	All areas within or serving exclusively one dwelling 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 then 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, reastraunts, bars, etc.	1.5	✗	✗	✗	✗	
(C3) Areas without obstacles for moving people and not susceptible to over-crowding	Stairs, landings, eternal 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	✗	✗	✗	✗	
(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	✗	✗	✗	✗	

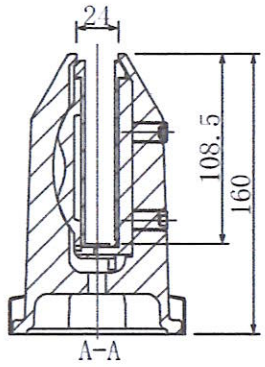
Number	Part name	Description	Quantity
1	160BFUS-CP		1
2	160BFUS		1
3	M12x20	Grub screw	2
4	TL7240SSPI		1
5	TL7240PI		1
6	TL7240PL		1
7	TL7240SSPL		1











Drawing Spec.	A4	WEIGHT(KG)		Drawn by	Michael	Drawn NO. 160BFUS Exploded view
Projection		Date	19-05-10	Auditing by		
Version No.	F01	RE Date		Approved by		

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Product test Report

PTY LTD

DATE	PART NO	H/RAIL TYPE
14/1/20	160BFUS	N/A

GLASS TYPE		12mm TOUGHENED GLASS
GLASS SIZE		1000W x 1000H
TEST METHOD		Horizontal loading applied with hydraulic ram
FIXING TYPE, CENTRES		4x M10 THREADED RODS CHEMICAL FIXED
TEMPERATURE		PER SPEC
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	18.69	0	60 Sec	NO		N
0.75kn	27.82	0.69	60 Sec	NO		N
1.0kn	33.42	1.52	60 Sec	NO		N
1.25kn						
1.5kn						
1.75kn						
2.0kn						
2.25kn						
2.5kn						
2.75kn						
3.0kn						
3.25kn						
3.5kn						

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SWING TEST	WEIGHT KG	DROP HEIGHT	HIT LOCATION ON PANEL	PASS / FAIL

Notes:

Load 0.75 x 1.46 = 1.095 kN

Deflection = 43.16mm

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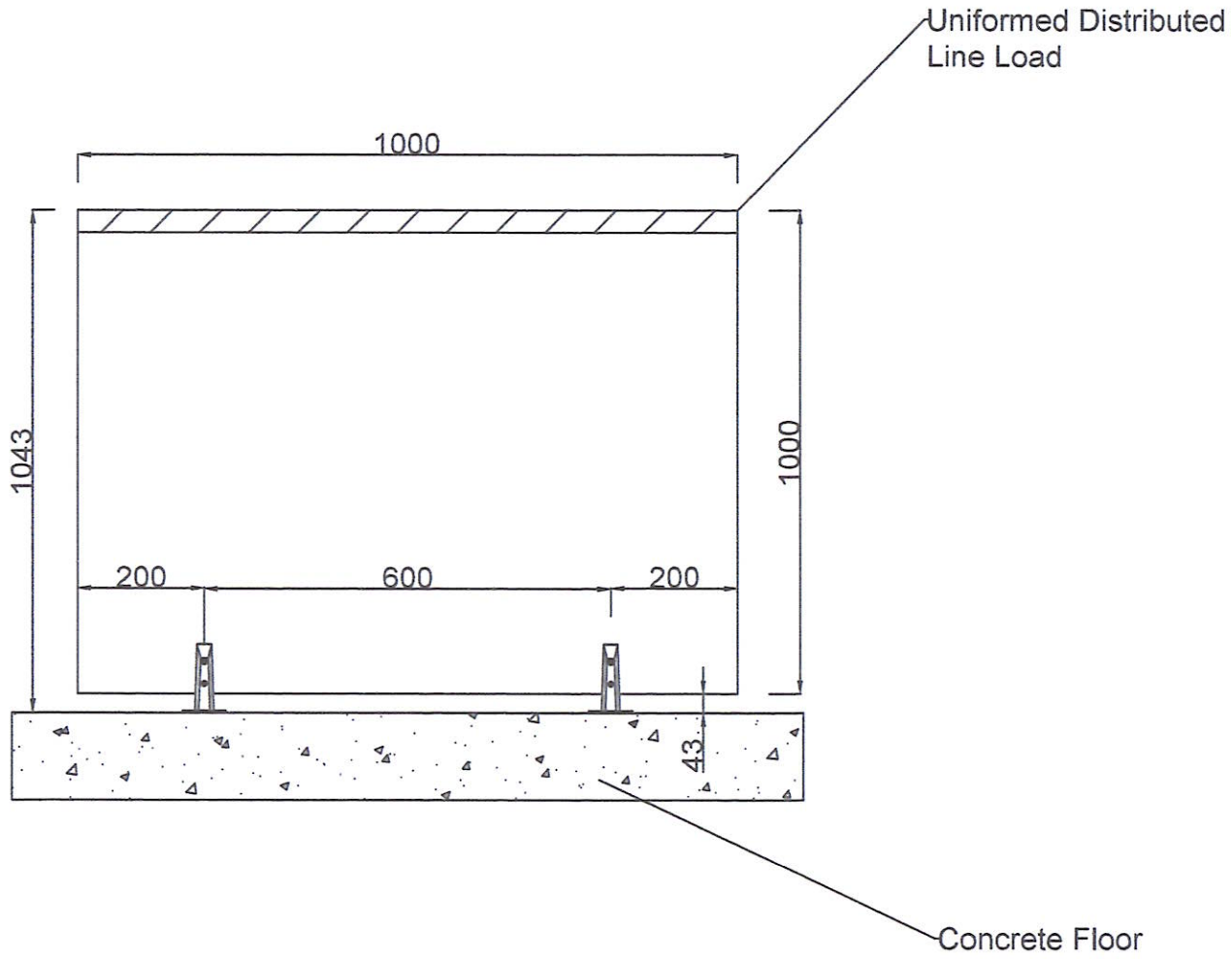

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Part no: 160BFUS	Glass Type: 12mm Toughened Glass	
Material: 2205 Duplex	Scale:	
Fasteners used for testing: 316L SS M10 Bolts		

PHOTOS

160BFUS **12mm Toughened Glass**

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