
BALUSTRADE - GLASS



YINTEC

BALUSTRADE WINDOW COMBINATION

TESTED BY
AZUMA DESIGN PTY LTD

AZT0347.16

NATA ACCREDITED LABORATORY NO. 15147

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The results of the tests, calibrations and/or measurements included
in this document are traceable to Australian/national standards.

2.3 Posts

Material	Aluminium
Overall Size	55 mm (W) x 40 mm (L) x 2540 mm (H)
Base Plate (if applicable)	Nil
Drawing supplied	Yes
Fixing Method	Mounted into window frame with M12 Dynabolts, 600 mm spacing



Figure 1: System

3.1.4 Pictures



Figure 2: Outwards Push



Figure 3: Outwards Push - Bend

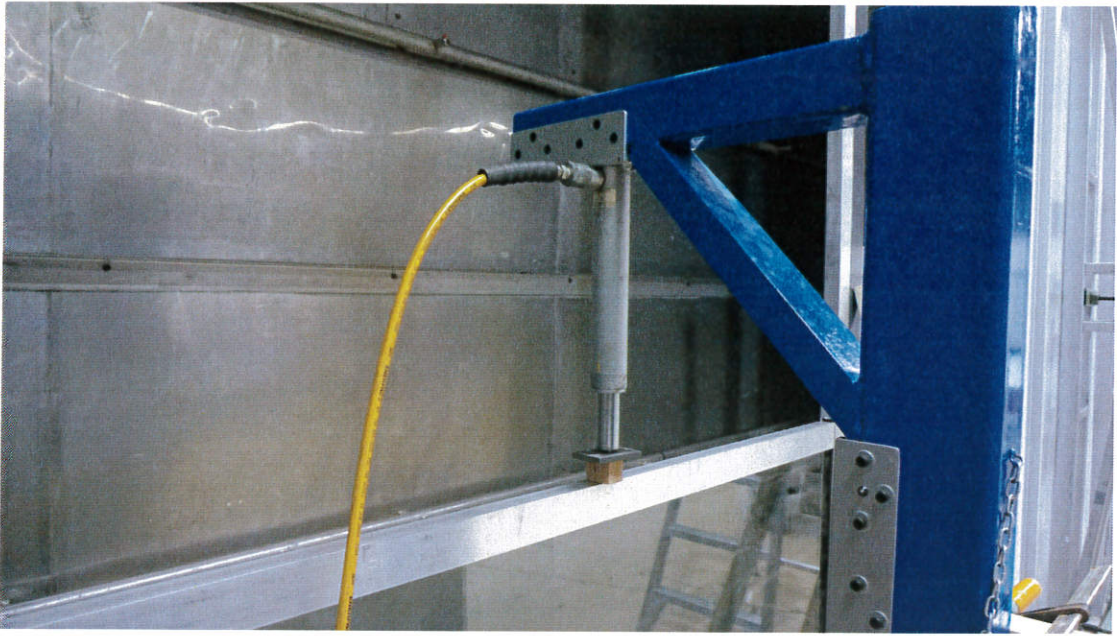


Figure 4: Downwards Push

3.2 Uniformly Distributed Load - VERTICAL

3.2.1 Procedure

From AS 1170.1 - 2002 - Subsection 3.6 Barriers - Table 3.3 Minimum imposed actions for Barriers.

1. Set the hydraulic ram to push on the handrail at the centerline between the two fixed points.
2. Record a datum from the center of the push area to a fixed point.
3. Smoothly increase the force acting on the side of the rail until the test force is equal to 600 N.
4. Hold the test force for 1 minute.
5. Record the deflection.
6. Remove the test force and after 2 minutes record the permanent deflection reading.

3.2.2 Calculation

The required uniformly distributed load for the glass panel is the imposed action multiplied by the width of the product:

$$\text{Required Force}(N) = \text{Imposed Action}(N/m) * \text{Width of the Panel}(m) \quad (2)$$

Note: Width used in the above equation was 1800 mm.

3.2.3 Results

Uniformly Distributed Load	Load Applied	Datum (mm)	Reading after load removed (mm)	Permanent Deflection (mm)
350 N/m	630 N	483 mm	484 mm	1 mm
750 N/m	1350 N	484 mm	485 mm	1 mm

3.2.4 Pass/Fail Criteria

The following maximum deflection limits apply to this product:

$$\frac{Span}{60} = \frac{1800}{60} = 30mm \quad (3)$$

This value is only applicable while it remains less than 30 mm, otherwise 30 mm is maximum allowable deflection.

Criteria	Result	Pass/Fail
350 N/m (630 N)		
Deflection no more than 30 mm after load is removed	1 mm	Pass
Any damage, signs of breakage or fracture observed	Nil	Pass
Notes: Nil		
750 N/m (1350 N)		
Deflection no more than 30 mm after load is removed	1 mm	Pass
Any damage, signs of breakage or fracture observed	Nil	Pass
Notes: Nil		
Total Deflection	2 mm	Pass

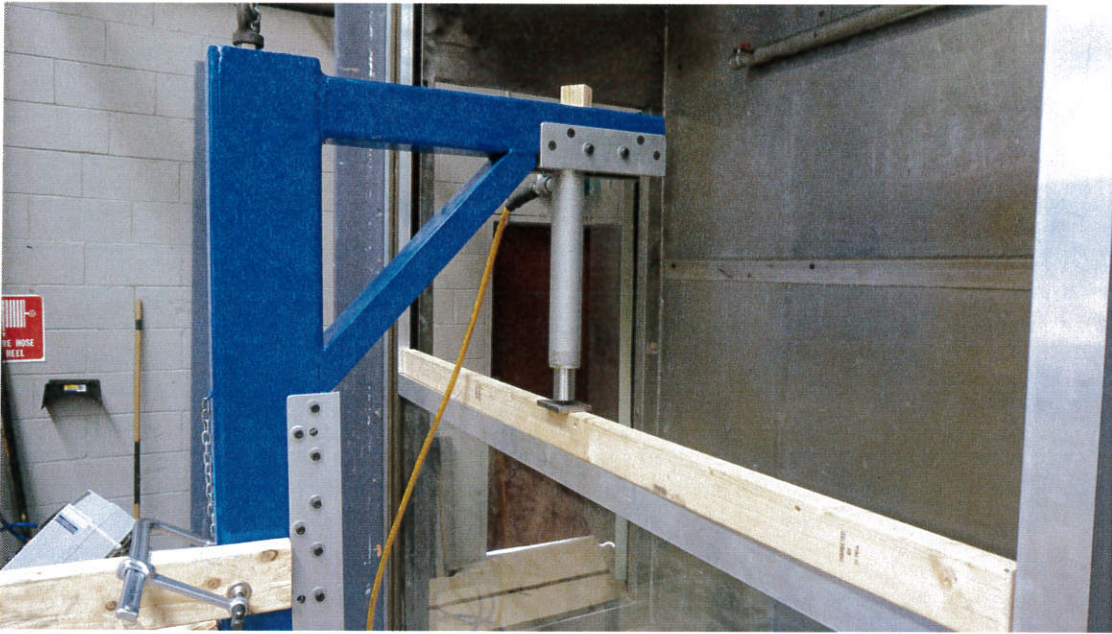


Figure 5: Vertical Uniform Distributed Load

3.3 Uniformly Distributed Load - HORIZONTAL

3.3.1 Procedure

From AS 1170.1 - 2002 - Subsection 3.6 Barriers - Table 3.3 Minimum imposed actions for Barriers.

1. Set the hydraulic ram to push on the handrail at the centerline between the two fixed points.
2. Record a datum from the center of the push area to a fixed point.
3. Smoothly increase the force acting on the side of the rail until the test force is equal to 600 N.
4. Hold the test force for 1 minute.
5. Record the deflection.
6. Remove the test force and after 2 minutes record the permanent deflection reading.

3.3.2 Calculation

The required uniformly distributed load for the glass panel is the imposed action multiplied by the width of the product:

$$\text{Required Force (N)} = \text{Imposed Action (N/m)} * \text{Width of the Panel (m)} \quad (4)$$

Note: Width used in the above equation was 1800 mm.

3.3.3 Results

Uniformly Distributed Load	Load Applied	Datum (mm)	Reading after load removed (mm)	Permanent Deflection (mm)
350 N/m	630 N	433 mm	433 mm	0 mm
750 N/m	1350 N	433 mm	433 mm	0 mm
1500 N/m	2700 N	433 mm	433 mm	0 mm
3000 N/m	5400 N	N/A	N/A	N/A

3.3.4 Pass/Fail Criteria

The following maximum deflection limits apply to this product:

$$\frac{Span}{60} = \frac{1800}{60} = 30mm \quad (5)$$

This value is only applicable while it remains less than 30 mm, otherwise 30 mm is maximum allowable deflection.

Criteria	Result	Pass/Fail
350 N/m (630 N)		
Deflection no more than 30 mm after load is removed	0 mm	Pass
Any damage, signs of breakage or fracture observed	Nil	Pass
Notes: Nil		
750 N/m (1350 N)		
Deflection no more than 30 mm after load is removed	0 mm	Pass
Any damage, signs of breakage or fracture observed	Nil	Pass
Notes: Nil		
1500 N/m (2700 N)		
Deflection no more than 30 mm after load is removed	0 mm	Pass
Any damage, signs of breakage or fracture observed	Nil	Pass
Notes: Balustrade unit flexes back into window frame		
3000 N/m (5400 N)		
Deflection no more than 30 mm after load is removed	N/A	Not Tested
Any damage, signs of breakage or fracture observed	N/A	Not Tested
Notes: Nil		
Total Deflection at 1500 N/m Rating	0 mm	Pass

3.3.5 Pictures

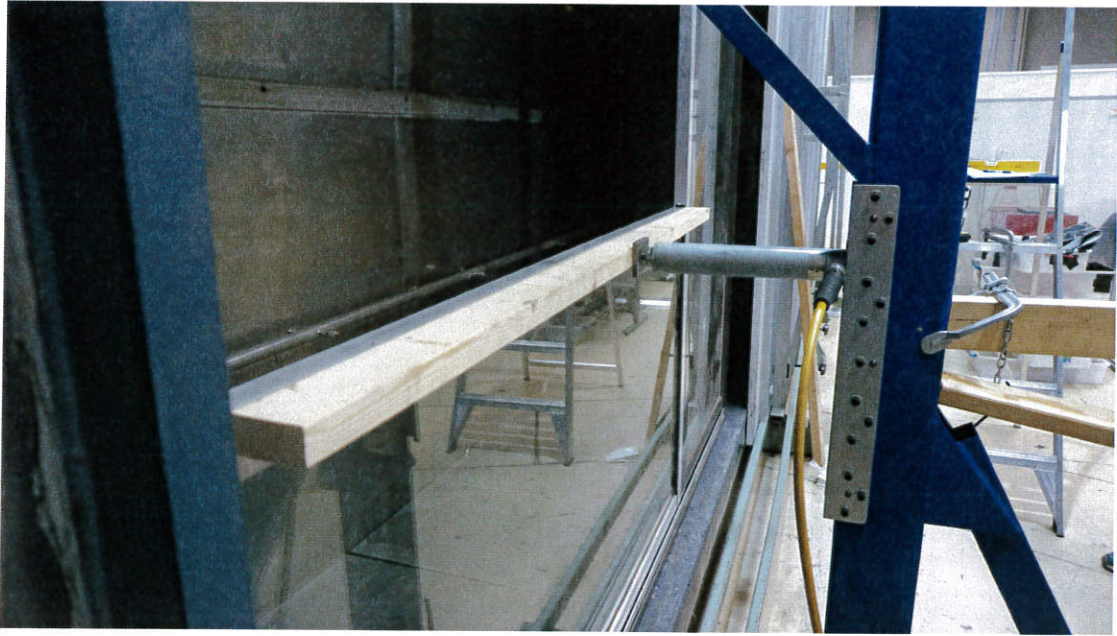


Figure 6: Horizontal Uniform Load - 350 N/m

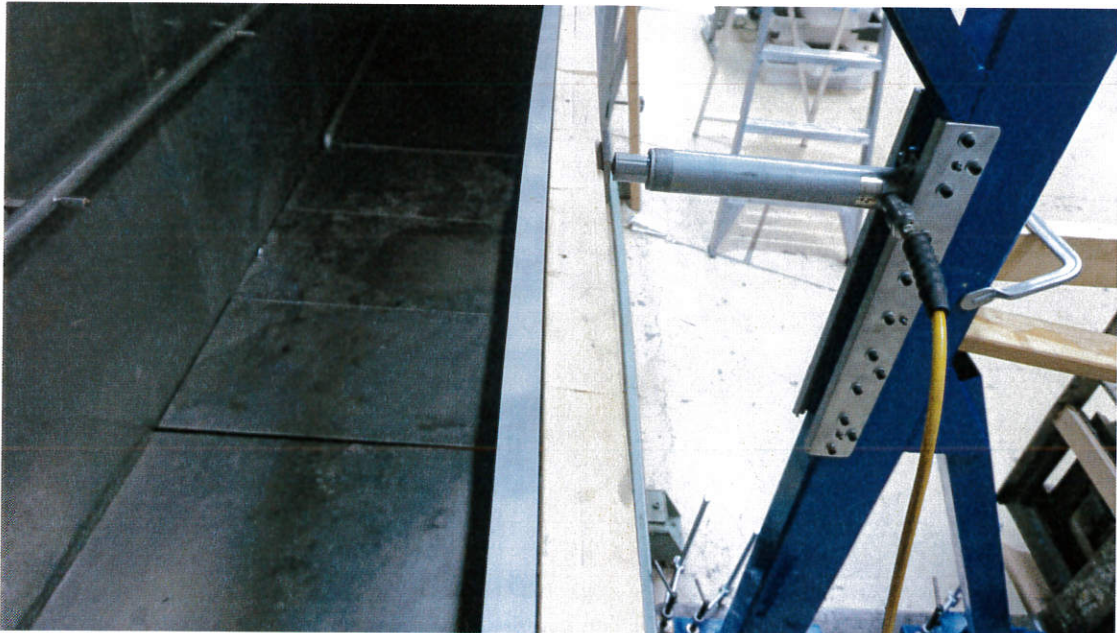


Figure 7: Horizontal Uniform Load - 1500 N/m

4 Conclusion and Signatories

4.1 Conclusion

From the results achieved the sample is deemed to satisfy the loading requirements as per table 3.3 of AS1170.1- 2002 for the following classification:

- for a Category 'A' Domestic and residential activities - All areas within or serving exclusively one dwelling including stairs, landings, etc. but excluding external balconies and edges of roofs;
- for a Category 'B, E' Offices and work areas not included elsewhere including storage areas - Areas not susceptible to overcrowding in office and institutional buildings also industrial and storage buildings
- for a Category 'C1/C2' Areas without obstacles for moving people and not susceptible to over-crowding - Areas with fixed seating adjacent to a balustrade, restaurants, bars, etc.
- for a Category 'D' Retail Areas - All retail areas including public areas of banks/building societies, (see C5 for areas where overcrowding may occur)
- for a Category 'F/G' Vehicular - Pedestrian areas in car parks including stairs, landings, ramps, edges of internal floors, foot-ways, edges of roofs

NOTE: All classifications with equal or lower load specifications may be applied to this sample. For more information as to their specific use please see table 3.3 of AS1170.1 - 2002.

NOTE 2: This usage (under B,E) is for access to and safe working places normally used by operating, inspection, maintenance and servicing personnel.

4.2 Signatories

Tested By: Ash Horne

Signatory Name: Ash Horne

Signatory Signature: Ash Horne

Date: 12/10/16



NATA Accredited Laboratory
Number: 15147

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Checked by:

AH

BUILDER CHECKLIST:

- SLAB THICKNESS
- BANDBEAMS
- MECHANICAL
- DOWN PIPES CLASHING WITH AWINGS
- WALL TYPES
- LEFT/RIGHT HAND SLIDE OR HINGE
- CONDENSER
- MECHANICAL GRILLS
- BLANKING PLANTS
- VERMIN MESH
- HOBS
- SINGLE MULLION
- DOUBLE MULLION
- INTERNAL WALLS MEETS WINDOWS
- GLAZING TYPE
- FINISHES
- WINDOW PROFILE
- ALIGNMENT WITH RETURN WINDOWS
- CONTINUOUS SUBSILL
- KITCHEN JOINERY AGAINST WINDOW
- SPANDREL GLASS
- WINDOW ALIGNMENT IE HEIGHT OF TRANSOME
- CEILING HEIGHT AND TRANSOM HEIGHT
- BUILDING TOLERANCE
- IE PRECAST/ TIMBER OR METAL FRAME/ STRUCTURAL STEEL
- SUB JAMB REQUIREMENT
- Packaging & Logistics

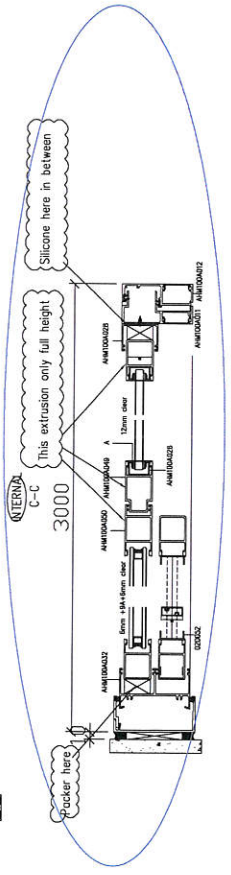
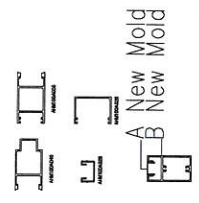
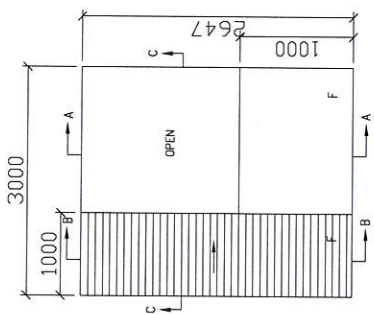
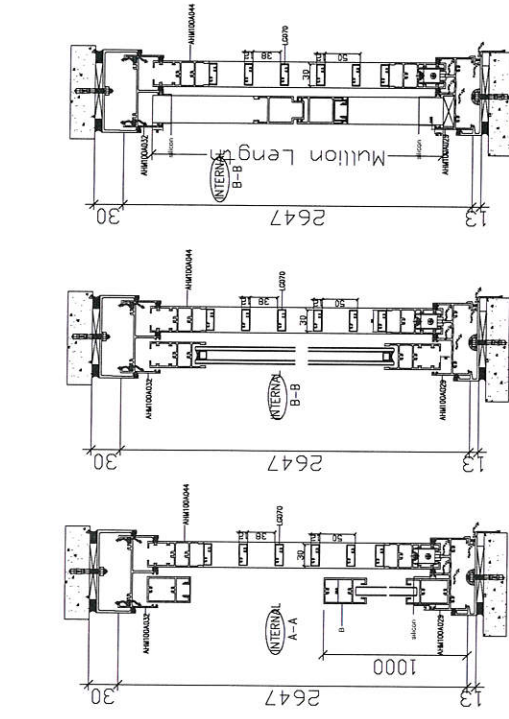
NO.	DATE	AMENDMENT	CUSTOMER:
A	23/05/2016	Drawing	HAMILTON MARINO
B	17/05/2016	Update	

PROJECT: 580 Coventry Haus

DRAWING TITLE:

Drawing NO. :
JOB NO. : 580
COLOR:
Scale:

DO NOT SCALE



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Checked by: AH



PRODUCT COMPLIANCE SCHEDULE

**South Bright Glass Production
 Foshan Gaoming Co. Ltd.**

Address:
 No.85, Gaofu one Road Fuwan Industrial Park, Gaoming, Foshan, P.R. China.

This schedule identifies the Certified Product(s) on which the PAS-Mark and ID. Number may be used.

**AS/NZS 2208:1996 Safety glazing materials in buildings
 (Including Amendment 1)**

Product Description	Float toughened safety glass Low-E toughened safety glass
Classification	Grade "A"
Nominal Glass Thickness	4mm to 12mm float glass 4mm to 12mm Low-E glass
Maximum Glass Size	Furnace dimensions: Line 1: 2500 mm (W) x 3500 mm (L) Line 2: 3000 mm (W) x 6000 mm (L)
Glass Colours	Acid Etch, Blue, Bronze, Clear, Green, Grey, White, Golden, Black, Red and Silvery

This schedule supersedes any previously issued schedule.

Assessment ID No: CSI-ID 7168
Issue date: 4th June 2016
Schedule No: 7168-2016-06-S1-Rev1

Certification date: 31st May 2016
Expiry date: 14th June 2017

Azma Khan
 Azma Khan
 Managing Director
 Certification Solutions
 International Pty Ltd

