

# Certificate of Conformity

Certificate number: CM40181

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**Certificate Holder:**

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**THIS TO CERTIFY THAT**

**StructGlass**

**Type and/or use of product:**

Balustrade System for high rise balconies.

**Description of product:**

CNC Milled Posts powdercoated with 11.52 SGP Toughened Glass anchored into concrete.

**COMPLIES WITH THE FOLLOWING BCA PROVISIONS AND STATE OR TERRITORY VARIATION(S)**

**BCA 2016**

	Volume One	Volume Two
<b>Performance Requirement(s)</b>	BP1.1(a)&(b) (i),(ii),(iii), (iv),(v),(vi), (vii),(viii),(x), (xi),(xii)&(xv) Structural Reliability	Not Applicable
	BP1.2 Structural Resistance	
	BP1.3 Glass Installations that could cause Injury	
	DP3(e),(f),(g)&(h) Fall prevention Barriers	
<b>Deemed-to-Satisfy Provision(s):</b>	Not Applicable	3.9.2.1 Barriers & Handrails – Application 3.9.2.3 (a)&(e) Construction of barriers to prevent falls
<b>State or territory variation(s):</b>	Not Applicable	Not Applicable

**SUBJECT TO THE FOLLOWING LIMITATIONS AND CONDITIONS AND THE PRODUCT TECHNICAL DATA IN APPENDIX A AND EVALUATION STATEMENTS IN APPENDIX B**

**Limitations and conditions:**

- a. DP3 does not apply where such a barrier would be incompatible with the intended use of an area such as a stage, loading dock or the like. DP3(g) does not apply to—
  - i. fire-isolated stairways, fire-isolated ramps, and other areas used primarily for emergency purposes, excluding external stairways and external ramps; and

**Building classification/s:**

**1,2,3,4,5,6,7,8,9 & 10**

  
**John Thorpe - CMI**

  
**Don Grehan – Unrestricted Building Certifier**

**Date of issue:** 14/12/2017

**Date of expiry:** 14/12/2020





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- ii. Class 7 (other than car parks) and Class 8 buildings and parts of buildings containing those classes.
- b. This Certificate is issued based on the evidence of compliance as detailed herein. Any deviation from the specifications contained in this Certificate is outside of this document's scope and the installation of the certified product/system will not be covered by this CodeMark certification. This may result in the product being classified as a non-conforming building product/system.

**Scope of certification:** The CodeMark Scheme is a building product certification scheme. The rules of the Scheme are available at the ABCB website [www.abcb.gov.au](http://www.abcb.gov.au). This Certificate of Conformity is to confirm that the relevant requirements of the Building Code of Australia (BCA) as claimed against have been met. The responsibility for the product performance and its fitness for the intended use remain with the certificate holder. The certification is not transferrable to a manufacturer not listed on Appendix A of this certificate.

**Disclaimer:** The Scheme Owner, Scheme Administrator and Scheme Accreditation Body do not make any representations, warranties or guarantees, and accept no legal liability whatsoever arising from or connected to, the accuracy, reliability, currency or completeness of any material contained within this certificate; and the Scheme Owner, Scheme Administrator and Scheme Accreditation Body disclaim to the extent permitted by law, all liability (including negligence) for claims of losses, expenses, damages and costs arising as a result of the use of the product(s) referred to in this certificate.



# Certificate of Conformity

## APPENDIX A – PRODUCT TECHNICAL DATA

### A1 Type and intended use of product

As per page one.

### A2 Description of product

As per page one.

### A3 Product specification

The StructGlass Balustrade System includes a series of balustrade panels ranging from 150mm to 1800mm in width.

<b>Glass Barrier</b>	Toughened/Laminated
<b>Glass Thickness</b>	11.52 (5/1.52/5)mm
<b>Glass Installation Type</b>	Aluminium post, 2 piece full vertical clamp
<b>Post Material</b>	Aluminium
<b>Post Overall size</b>	25mm x 80mm x 1348mm

### A4 Manufacturer and manufacturing plant(s)

Aluminium Balustrade North Coast  
15-17 Bearing Avenue,  
Warana Qld 4575

### A5 Installation requirements

- StructGlass Balustrade System must be installed by an approved installer and in line with [StructGlass installation drawings Prototype-Glass-Balustrade-Rev-E](#).
- The StructGlass Balustrade System must be installed in accordance with the relevant requirements of BCA Volume One D2.16 and/or BCA Volume Two 3.9.2.2 & 3.9.3.3 as well as any relevant standards.
- No gap larger than 125mm is incorporated into the design, recommended gap is 50mm.

## A6 Other relevant technical data

### Testing Configuration 150mm Panel

<b>Glass Panel Size</b>	1150mm x 150mm
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0388.17)
<b>Post Overall size</b>	25mm x 80mm x 1348mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment

### Results

<b>Direction</b>	<b>Load applied</b>	<b>Datum (mm)</b>	<b>Reading after Load removed</b>	<b>Permanent deflection (mm)</b>
Outwards	900N (600) N	428mm	429mm	1mm
Downwards	900N (600) N	422mm	423mm	1mm
<b>Uniformly Distributed Load</b>	<b>Load applied</b>	<b>Datum (mm)</b>	<b>Reading after Load removed</b>	<b>Permanent deflection (mm)</b>
350 N/m	N/A	N/A	N/A	Not tested
750N/m	168.75 N (112.5 N)	423mm	423mm	0mm

*Source: Azuma Design Pty Ltd Test report AZT0388.17*

## Testing Configuration 300mm Panel

<b>Glass Panel Size</b>	1150mm x 300mm
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0389.17)
<b>Post Overall size</b>	25mm x 80mm x 1348mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	185.4mm

## Results

<b>Direction</b>	<b>Load applied</b>	<b>Datum (mm)</b>	<b>Reading after Load removed</b>	<b>Permanent deflection (mm)</b>
Outwards	900 N (600) N	470mm	471mm	1mm
Downwards	900 N (600) N	429mm	429mm	0mm
<b>Uniformly Distributed Load</b>	<b>Load applied</b>	<b>Datum (mm)</b>	<b>Reading after Load removed</b>	<b>Permanent deflection (mm)</b>
350 N/m	N/A	N/A	N/A	Not tested
750N/m	337.5 N (225 N)	429mm	429mm	0mm

**Source:** Azuma Design Pty Ltd Test report AZT0389.17

## Testing Configuration 450mm Panel

<b>Glass Panel Size</b>	1150mm x 450mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0390.17)
<b>Post Overall size</b>	25mm x 80mm x 1348mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	278.1mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	445mm	448mm	3mm
Downwards	900 N (600) N	428mm	428mm	0mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	506.25 N (337.5 N)	428mm	428mm	0mm

*Source: Azuma Design Pty Ltd Test report AZT0390.17*

## Testing Configuration 600mm Panel

<b>Glass Panel Size</b>	1150mm x 600mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0391.17)
<b>Post Overall size</b>	25mm x 80mm x 1348mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	370.8mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	457mm	458mm	1mm
Downwards	900 N (600) N	427mm	427mm	0mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	675 N (450 N)	427mm	427mm	0mm

*Source: Azuma Design Pty Ltd Test report AZT0391.17*

## Testing Configuration 750mm Panel

<b>Glass Panel Size</b>	1150mm x 750mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0392.17)
<b>Post Overall size</b>	25mm x 80mm x 1348mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	463.5mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	464mm	464mm	0mm
Downwards	900 N (600) N	423mm	424mm	1mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	843.75 N (562.5 N)	424mm	424mm	0mm

**Source:** Azuma Design Pty Ltd Test report AZT0392.17



## Testing Configuration 900mm Panel

<b>Glass Panel Size</b>	1150mm x 900mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0393.17)
<b>Post Overall size</b>	25mm x 80mm x 1348mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	556.2mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	469mm	471mm	2mm
Downwards	900 N (600) N	434mm	434mm	0mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	1012.5 N (675 N)	434mm	434mm	0mm

*Source: Azuma Design Pty Ltd Test report AZT0393.17*

## Testing Configuration 1050mm Panel

<b>Glass Panel Size</b>	1150mm x 1050mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0394.17)
<b>Post Overall size</b>	25mm x 80mm x 1348 mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	648.9mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	457mm	458mm	1mm
Downwards	900 N (600) N	428mm	428mm	0mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	1181.25 N (787.5 N)	428mm	428mm	0mm

*Source: Azuma Design Pty Ltd Test report AZT0394.17*

## Testing Configuration 1200mm Panel

<b>Glass Panel Size</b>	1150mm x 1200mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0395.17)
<b>Post Overall size</b>	25mm x 80mm x 1348mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	741.6mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	463mm	464mm	1mm
Downwards	900 N (600) N	429mm	429mm	0mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	1350 N (900 N)	429mm	429mm	0mm

*Source: Azuma Design Pty Ltd Test report AZT0395.17*

## Testing Configuration 1350mm Panel

<b>Glass Panel Size</b>	1150mm x 1350mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0396.17)
<b>Post Overall size</b>	25mm x 80mm x 1348mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	834.3mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	443mm	444mm	1mm
Downwards	900 N (600) N	432mm	432mm	0mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	1518.75 N (1012.5 N)	432mm	432mm	0mm

*Source: Azuma Design Pty Ltd Test report AZT0396.17*

## Testing Configuration 1500mm Panel

<b>Glass Panel Size</b>	1150mm x 1500mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0397.17)
<b>Post Overall size</b>	25mm x 80mm x 1348mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	927mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	456mm	456mm	0mm
Downwards	900 N (600) N	429mm	429mm	0mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	1687.5 N (1125 N)	429mm	429mm	0mm

*Source: Azuma Design Pty Ltd Test report AZT0397.17*

## Testing Configuration 1650mm Panel

<b>Glass Panel Size</b>	1150mm x 1650mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0398.17)
<b>Post Overall size</b>	25mm x 80mm x 1348 mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	1019.7mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	464mm	466mm	1mm
Downwards	900 N (600) N	529mm	529mm	0mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	1856.25 N (1237.5 N)	529mm	529mm	0mm

*Source: Azuma Design Pty Ltd Test report AZT0398.17*

## Testing Configuration 1800mm Panel

<b>Glass Panel Size</b>	1150mm x 1800mm
<b>Glass installation Type</b>	Aluminium post 2, piece full vertical clamp
<b>Gap between bottom of barrier and ground level</b>	62mm
<b>Complies with AS 2208:1996</b>	Yes (Azuma Design Pty Ltd Test report AZT0389.17)
<b>Post Overall size</b>	25mm x 80mm x 1348 mm
<b>Base Plate</b>	100mm x 100mm x 2mm
<b>Fixing methods</b>	80mm hole core drilled, 120mm embedment
<b>Spacing between posts</b>	1112.4mm

## Results

Direction	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
Outwards	900 N (600) N	508mm	209mm	1mm
Downwards	900 N (600) N	529mm	529mm	0mm
Uniformly Distributed Load	Load applied	Datum (mm)	Reading after Load removed	Permanent deflection (mm)
350 N/m	N/A	N/A	N/A	Not tested
750N/m	2025 N (1350 N)	529mm	529mm	0mm

**Source:** Azuma Design Pty Ltd Test report AZT0399.17

**Note:** The minimum height of the barrier is typically 1050mm FFL - 50mm above the 1000mm DTS. The one section in which is subject to a walkway has been raised to 1300mm FFL, and all balustrade sections have a 850mm No Climb Zone (Minimum requirements are 150mm - 760mm = 610mm in DTS) No gap larger than 125mm is incorporated into the design, and is typically 50mm. Both wind and human impact loads have been considered for the engineering of the balustrade.

## APPENDIX B – EVALUATION STATEMENTS

### B1 Evaluation methods

1. A2.2 (a) and 1.2.2 (a) Reports from NATA accredited test laboratories and reports from Professional Engineer.

### B2 Reports

1. Kuraray Report; Analysis of laminated glass panel; Dated 30/08/2017.
2. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0388.17; 150mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
3. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0389.17; 300mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
4. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0390.17; 450mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
5. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0391.17; 600mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
6. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0392.17; 750mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
7. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0393.17; 900mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
8. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0394.17; 1050mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
9. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0395.17; 1200mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
10. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0396.17; 1350mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
11. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0397.17; 1500mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
12. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0398.17; 1650mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.
13. Azuma Design Pty Ltd; NATA Accreditation #15147; Report No. AZT0399.17; 1800mm panel testing to AS 1170.0:2011, AS 1170.1:2002 & Appendix B&C of AS1657-2013; Dated 12/10/2017; Shows compliance to Structure & Fall prevention barriers.

Note: The Certificate Holder has chosen not to make the above evidence of compliance publicly available, due to the documents being considered commercial in confidence.