

Test Report

To Illuminated Balustrade Australia Pty Ltd
42 Escarpment Drive Frankston SA 3199
Order No. 000001

Report No. **MTS-34129 IBAPTY Rev 1**
Reference No. **LMTS20-0080 Rev 1**
Issue Date 24/01/2020
Test Date 23/01/2020

Introduction

One (1) only Frameless Glass Balustrade was set up as a test assembly at LMATS Bibra Lake Work Shop for purpose of Balustrade testing to the requirements of AS 1170.1-2002 Clause 3.6 for occupancy C3 (Table 3.3).

Test Item(s) The assembly consisted of one (1) x 12mm(T)x 1200mm(W) x 970mm(H) Toughened Glass Panels, supported on two (2) x 52 x 162 Square Base Mounted G2205 Spigots; Four (4) x M10 Bolts and Four (4) Drop- In Anchors M10 were used for bolt down each Base Plate in concrete.

Examinations & Tests

The balustrade test assembly was subjected to the following tests:

1. Concentrated Load (Vertical & Horizontal) requirement from AS/NZS 1170.1 – 2002 CL 3.6 for occupancy C3.
2. Uniformly Distributed Load (Vertical & Horizontal) requirement from AS/NZS 1170.1 – 2002 CL 3.6 for occupancy C3.

1. Concentrated Load (Vertical) requirement from AS/NZS 1170.1 – 2002 CL 3.6 for occupancy C3.

Downward point load was applied at centerline between the two fixed points at the top edge of the glass panel. The test load was applied 600N(134lbf) without shock for a minimum of 30s, deflection Under Load (DUL) was recorded. At the completion of the series of tests, the load was removed and Permanent Deformation after 120s was measured and recorded.

2. Concentrated Load (Horizontal) requirement from AS/NZS 1170.1 – 2002 CL 3.6 for occupancy C3 and client requirements.

Outward point load was applied at centerline between the two fixed points at the top edge of the glass panel. The test load was applied initially at 600N (0.6KN)(134 lbf); then progressively increased to 1000N (1KN)(224 lbf) and then 1200N (1.2 KN)(269 lbf), holding for a minimum of 30s at each interval. Deflection Under Load (DUL) was recorded at each interval. At the completion of the series of tests, the load was removed and Permanent Deformation after 120s was measured and recorded.

3. Uniformly Distributed Load (Horizontal) requirement from AS/NZS 1170.1 – 2002 CL 3.6 for occupancy C3.

A rigid test beam was placed across the top edge of glass panel to provide a uniformly distributed line load. The load was applied horizontally to the center of the beam. The test load was applied 900N(202 lbf) without shock for a minimum of 30s, deflection Under Load (DUL) was recorded. At the completion of the series of tests, the load was removed and Permanent Deformation after 120s was measured and recorded.

4. Uniformly Distributed Load (Vertical) requirement from AS/NZS 1170.1 – 2002 CL 3.6 for occupancy C3 and client requirements.

A rigid test beam was placed across the top edge of glass panel to provide a uniformly distributed line load. The load was applied vertical to the center of the beam. The test load was applied initially at 0.75 KN/m(51.4 lb/ft) (900N)(202 lbf); then progressively increased to 1.5KN/m(102.8 lb/ft) (1800N)(404 lbf), holding for a minimum of 30s at each interval, deflection Under Load (DUL) was recorded at each interval. At the completion of the series of tests, the load was removed and Permanent Deformation after 120s was measured and recorded.

Summary

The results of the tests reported herein COMPLIED with the requirements of AS/NZS 1170.1 – 2002 CL 3.6 for occupancy C3 and client requirements.

Revision 1: This report is a revision of MTS-34129, dated 23/01/2020, and has been revised to add additional test as Client' request.



Mohsen Alvani
Materials Engineer



Accredited for compliance with
ISO/IEC 17025 – Testing
Accreditation Number 15840

Results

Glass Certificate



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SAI Global hereby grants:
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Qingdao Globalstar Glass Technology Co.,Ltd.

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Manufactured to:
 AS/NZS 2208:1996 - Safety glazing materials in buildings

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Licence No: SMK40377
 Issued : 8 December 2014
 Expires : 3 December 2019

Originally Certified : 4 December 2014
 Current Certification : 8 December 2014

Paul Butcher
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 Global Head - Assurance Services

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* For details of manufacture, refer to the license
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Glass Certificate

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Model identification of the goods on which the STANDARDSMARK may be used:

Description	Type of Safety Glass	Glass Thickness Range (mm)	Colors	Grade	Interlayer Thickness	Pattern	Coatings	Finish / Laminating Unit	Maximum Loading / Laminated Size	Interlayer Manufacture	Date Endorsement
Flat-tempered	Tempered	3-12	Clear, Grey	A		None, pattern, etched, pattern, roller pattern, float, polished		F1	2442mm x 4020mm	Solutia, Desant	3 Dec 2014
Flat-laminated	Laminated	5-16	Clear, Grey, Green, Brown, Low iron, tinted	A	0.38mm, 0.76mm, 1.52mm			L1	2442mm x 3658mm	Solutia, Desant	3 Dec 2014
Flat-laminated	Laminated	6-12	Clear	A	0.76mm, 1.52mm, 1.52mm			L1	2442mm x 3658mm	Solutia, Desant	3 Dec 2014
Flat-tempered	Tempered	3-12	Clear, Grey	A			EA, PG, SP, SW, ES	F1	2442mm x 4020mm	Solutia, Desant	4 Dec 2014
Flat-laminated	Tempered Laminated	6-20	Clear, Grey	A	0.76mm, 1.52mm, 1.52mm			ES, SP, SW, SW, ES	2442mm x 3658mm	Solutia, Desant	3 Dec 2014

End of Record

Licence No: SMK40377 Issued Date: 8 December 2014

This schedule supersedes all previously issued schedules

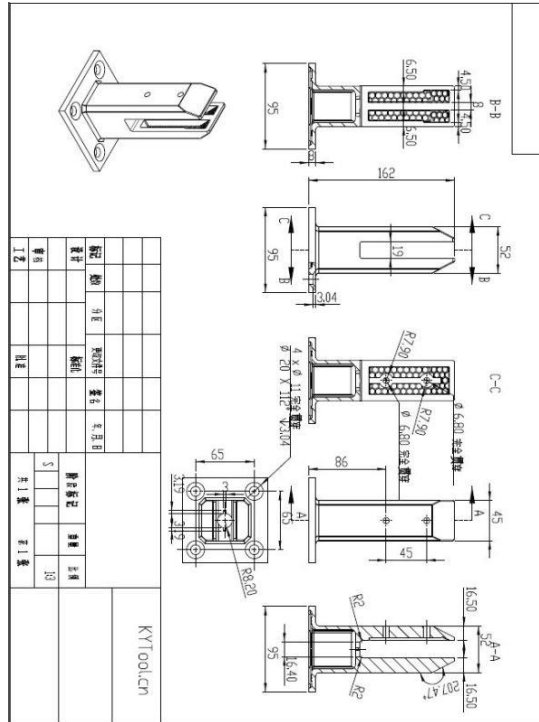


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Glass Certificate

Results

Spigot Design



Spigot Design



Spigot installation

Results

Concentrated Load (Downwards & Outwards) - AS/NZS 1170.1 - 2002

Test Specification AS/NZS 1170.1 - 2002, Clause 3.6 **Test Procedure** MTS-TP3.7 Load Tests of Protective Enclosures, Barriers and Fences

Specimen ID	Test Load (N)	Deflection Under Load (mm)	Permanent Distortion (mm)	Observations	Assessment
Horizontal	600	26.0	1.0	No signs Breakage, fracture or loosening of any part.	COMPLIES



Horizontal	1,000	46.0	1.0	Concentrated Load (Outwards) No signs Breakage, fracture or loosening of any part.	COMPLIES
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Concentrated Load (Outwards)

Results

Specimen ID	Test Load (N)	Deflection Under Load (mm)	Permanent Distortion (mm)	Observations	Assessment
Horizontal	1,200	64.0	3.0	No signs Breakage, fracture or loosening of any part.	COMPLIES



Vertical	600	0.0	0.0	Concentrated Load (Outwards) No signs Breakage, fracture or loosening of any part.	COMPLIES
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Concentrated Load (Downwards)

Requirements No Breakage, fracture or loosening of any part.

Results

Uniformly Distributed Load (Horizontal & Vertical) - AS/NZS 1170.1 - 2002

Test Specification AS/NZS 1170.1 - 2002, Clause 3.6 **Test Procedure** MTS-TP3.7 Load Tests of Protective Enclosures, Barriers and Fences

Specimen ID	Test Load (N)	Deflection Under Load (mm)	Permanent Distortion (mm)	Observations	Assessment
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Horizontal	900	42.0	2.0	No signs Breakage, fracture or loosening of any part.	COMPLIES
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Uniformly Distributed Load (Horizontal)

Vertical	900	0.0	0.0	No signs Breakage, fracture or loosening of any part.	COMPLIES
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Uniformly Distributed Load (Vertical)

Results

Specimen ID	Test Load (N)	Deflection Under Load (mm)	Permanent Distortion (mm)	Observations	Assessment
Vertical	1,800	0.0	0.0	No signs Breakage, fracture or loosening of any part.	COMPLIES



Uniformly Distributed Load (Vertical)

Requirements No Breakage, fracture or loosening of any part.