Test Report

AZUMA
Design

Wind and Water Testing

Client – A-Tech Australia

Product – Sliding Door

Tested By

Azuma Design Pty Ltd

AZT0216.19

Nata Accredited Laboratory No. 15147

Test results in this report are relevant only to the sample tested.

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

1 Customer Requirements

Customer requires all applicable tests from AS/NZS 4420.1 to be conducted to the test sample supplied. The tests are Structural deflection, Operating Force, Air infiltration, Water penetration and Ultimate strength.

2 Reference Standard

- AS2047 – 2014 Windows and External Glazed Doors in Buildings
- AS/NZS 4420.1 – 2016 Windows external glazed timber and composite doors - Methods of test - Test sequence, sampling and test methods

3 General Information

Customer	A-TECH AUSTRALIA
Address	258 Milperra Rd, Milperra NSW 2214
Date(s) of Test	16/05/19
Azuma Test Number	AZT0216.19
Window/Door Type	Sliding Door
Test Sample Description	Sliding Door Single Locking 6.38mm Laminated Glass

4 Test Result Summary

Test Method	Figures Recorded	Result
Deflection Test	Positive – 1600 Pa	Pass
	Negative – 1400 Pa	Pass
Operating Force Test	180/110 N	Pass
Air Infiltration Test	High	Pass
Water Penetration Resistance Test	250 Pa	Pass
Ultimate Strength Test	Positive – 3500 Pa	Pass
	Negative – 3500 Pa	Pass

5 Test Sample Description

Product Name	Sliding Door
Model	
Dimension of Frame	2580 mm (Height) x 1765 mm (Width)
Dimension of Sashes	Sash 1: 2502 mm (Height) x 875 mm (Width)
Glazing – Size/Type	Sash 1: 2420 mm (Height) x 772 mm (Width) Glass Thickness/Type: 6.38mm Laminated Glass
Hardware	Single Locking
Drawing Identification	Yes
Profile Section	Yes
Drain holes	Yes
Weep holes	Nil
Gasket/Seals/Hairs	Mohair
Glass Retention	Rubber Glazed
Sub Head and Sub Sill Used	Yes

6 Procedures

6.1 Deflection Test

1. The test sample shall be operative and pre-loaded as described in AS 4420.1.

2. The pre-load pressure shall be removed and the zero position of the displacement measuring devices recorded.

3. Differential pressures in the same direction shall then be applied across the test sample in not less than four approximately equal increments until the test pressure is reached. The pressure shall be held for at least 1 min at each pressure increment, and the readings of the displacement measuring devices recorded before the pressure is increased.

4. The differential pressure shall be removed and after 2 min the zero displacement readings shall be taken.

5. The direction of the air pump or test sample shall be reversed and Steps (1) to (4) shall be repeated using the opposite test loading.

6.2 Operating Force Test

1. With the window closed, but unlocked, an operating force shall be applied, without shock, in the plane and direction of the sash operation.

2. For both directions of sash travel, the following forces shall be noted and recorded:

(a) That capable of setting the sash in motion.

(b) That capable of maintaining the motion after the sash frame is clear of the perimeter frame of the test sample.

3. Each sliding sash of the test sample is tested separately.

4. For horizontally sliding sashes, the force shall be applied either at the position of a fixed handle, or at one-third of the height of the pull stile above the sill for continuous or adjustable handgrips.

5. For vertically sliding sashes, the force shall be applied at the sash pulls or at the midpoint of the bottom rail, or at the position nominated by the manufacturer.

6.3 Air Infiltration Test

1. Operation and pre-loading as described in AS 4420.1.

2. The face of the test sample shall then be sealed airtight by covering it with an impervious film. If this is not practicable, all joints, weep holes, and glazing or sealant lines of the test sample shall be sealed with impervious adhesive tape.

3. Positive and negative test pressures shall then be applied, and the base air infiltration rates through the test apparatus shall be determined by air flow meter.

4. The sealing film or tape shall be removed from the test sample and the air infiltration rates determined. The air infiltration through the test sample shall be the difference between the base and total readings.

6.4 Water Penetration Resistance Test

1. The test sample shall be subjected to water sprayed uniformly and continuously over the exterior face of the test sample at a rate not less than 0.05 L/m^2s. At the start of the test, the water sprays shall operate for 5 min with zero air pressure differential on the test sample.

2. The test pressure shall be applied and maintained for 15 min with the water sprays still operating. The visible internal surfaces of the test sample shall be inspected throughout the water spray operation.

3. Any water appearing on the inside surfaces of the test sample shall be noted and recorded, with the extent and, if possible, the source of penetration of uncontrolled water. Uncontrolled water shall be as defined in AS 2047.

4. The pressure and water sprays shall then be removed from the test sample.

6.5 Ultimate Strength Test

1. The test sample shall be subjected to a smoothly increasing differential pressure up to the test pressure determined in Clause 6.1, conducted individually in both positive and negative directions.

2. The time taken to reach the structural test pressure shall be approximately 1 min. Test pressure shall be maintained on the test sample for a period of 10 s.

3. If a sponsor requires incremental tests, each increment shall represent a separate test requiring 10 s duration.

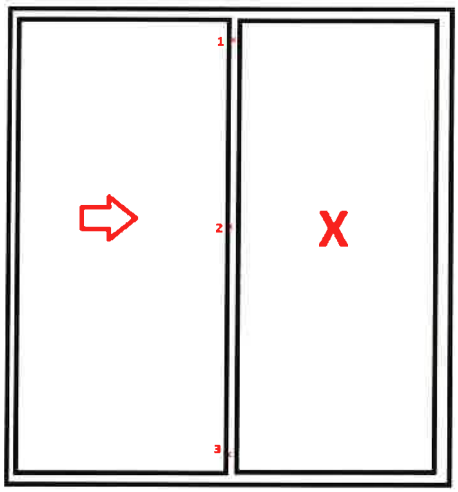
4. At the conclusion of the test at each loading, the test sample shall be inspected and any signs of deformity or damage or collapse of the test sample noted and recorded.

7 Results

7.1 Deflection Test

Setup 1	
Structural Member	Interlock
Span Length	2420 mm
Transducers Used	1,2,3
Maximum Allowable Deflection	9.68 mm
Test Pressure Applied	Positive – 1600 Pa
	Negative – 1600 Pa
Test Deflection Ratio of Sample	Positive – 1/256
	Negative –1/1399
Result	Positive – Pass
	Negative – Pass

Window/Door Drawing indicating transducer position



7.2 Operating Force Test

Movement Type	Sash	Opening Force	Closing Force	Allowable	Result
Initiating	1	30 N	35 N	180/110	Pass
Sustaining	1	25 N	29 N	180/110	Pass

7.3 Air Infiltration Test

Barometric Pressure	996 Pbar
Air Temperature	21°C

Pressure	Sealed	Unsealed	Actual
Positive - 75 Pa	37 Pa	90 Pa	0.69 $Ls^{-1}m^{-2}$
Negative - 75 Pa	30 Pa	146 Pa	1.34 $Ls^{-1}m^{-2}$

Air Infiltration Level	Direction	Allowable	Actual	Result
Low	Positive and Negative	1.0 $Ls^{-1}m^{-2}$	0.69 $Ls^{-1}m^{-2}$ 1.34 $Ls^{-1}m^{-2}$	Fail
High	Positive Only	5.0 $Ls^{-1}m^{-2}$	0.69 $Ls^{-1}m^{-2}$	Pass

7.4 Water Penetration Resistance Test

Wet Down Complete – 5 minutes	Yes
Maximum Pressure Applied to Sample	250 Pa
Time Pressure Held for	15 minutes
Leakages Observed	Nil
Observations	Nil

7.5 Ultimate Strength Test

Maximum Pressure Applied to Sample	Positive – 3500 Pa Negative – 3500 Pa
Time Pressure Held for	10 Sec
Compliant with AS2047 Clause 2.3.1.7	Yes
Observations	Nil

8 Signatories

Tested By: Jayden Mudford

Signature: J. Mudford

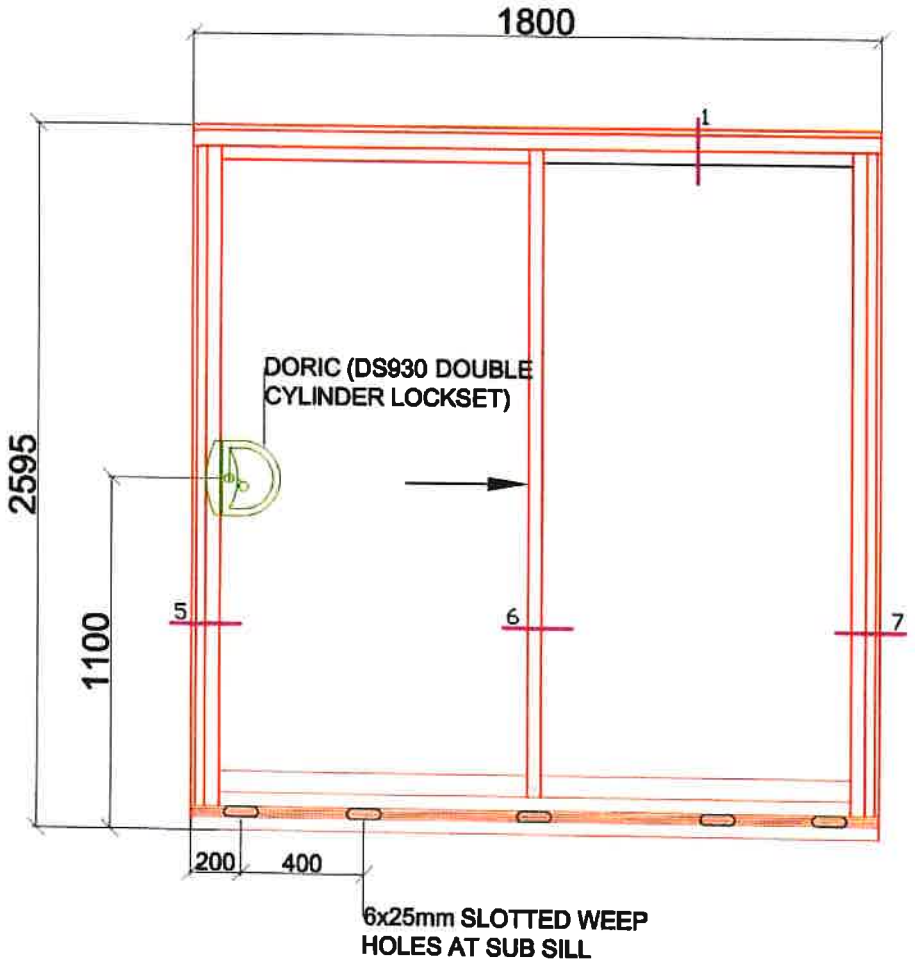
Date: 25/06/2019

Checked By: Ash Horne

Signature: A Horne

Date: 25/06/2019

END OF REPORT



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Checked by:

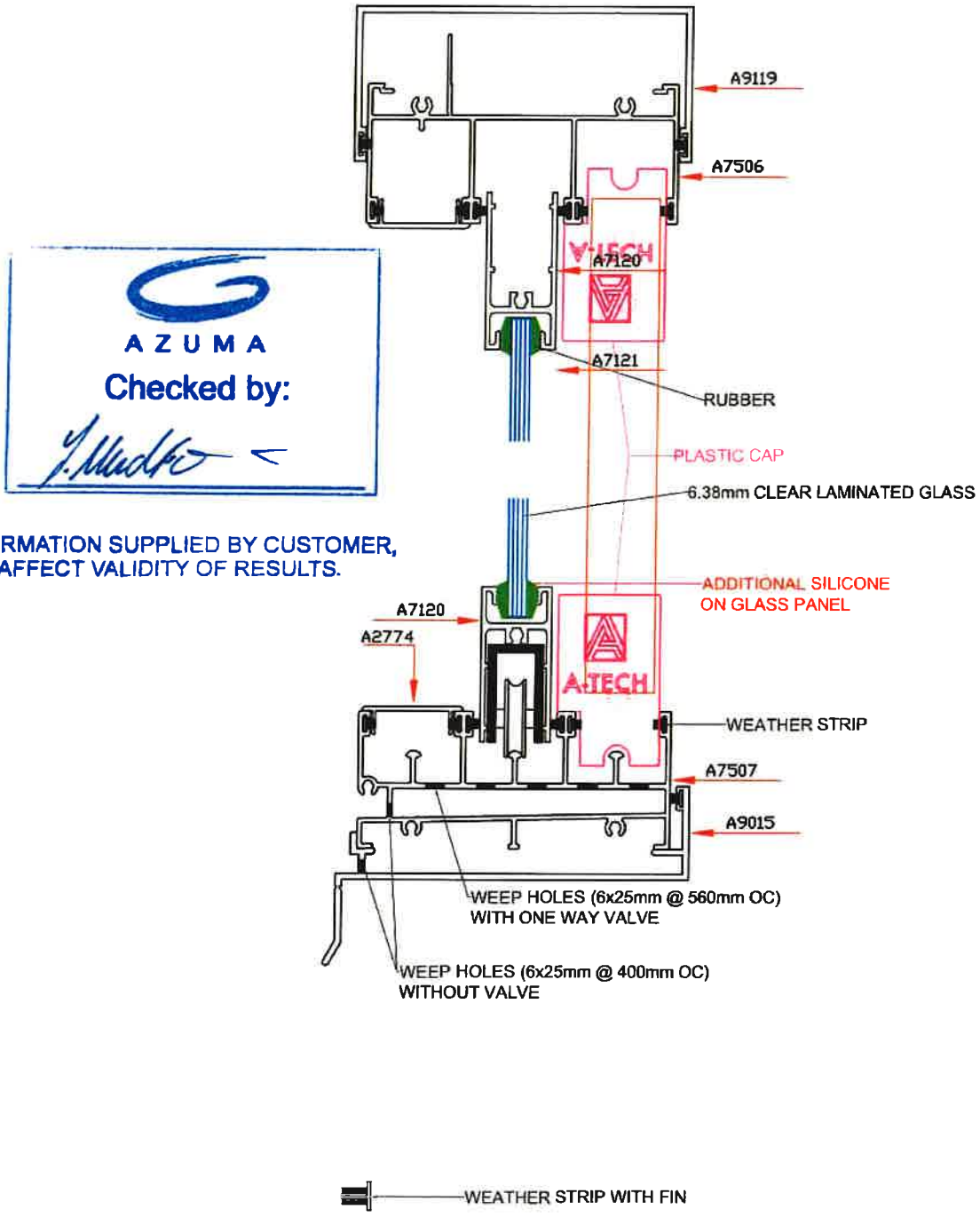
INFORMATION SUPPLIED BY CUSTOMER, MAY AFFECT VALIDITY OF RESULTS.

REV.	DATE	DESCRIPTION OF REVISION	BY

A-TECH AUSTRALIA
258 Milperra Rd.,
Milperra,NSW 2214
PH : 1300 775 525
FAX : (02) 9792 7984
www.atechaustralia.com.au

DRAWING TITLE:	2 PANELS SEMI COMMERCIAL SLIDING DOOR (HEAVY DUTY)
PROJECT TITLE:	
DRAWN BY:	
DATE:	SCALE: NA
DRAWING NO.	ATA-2PSCSD-001 Rev. -

1 - 2 SECTION (2 PANELS)



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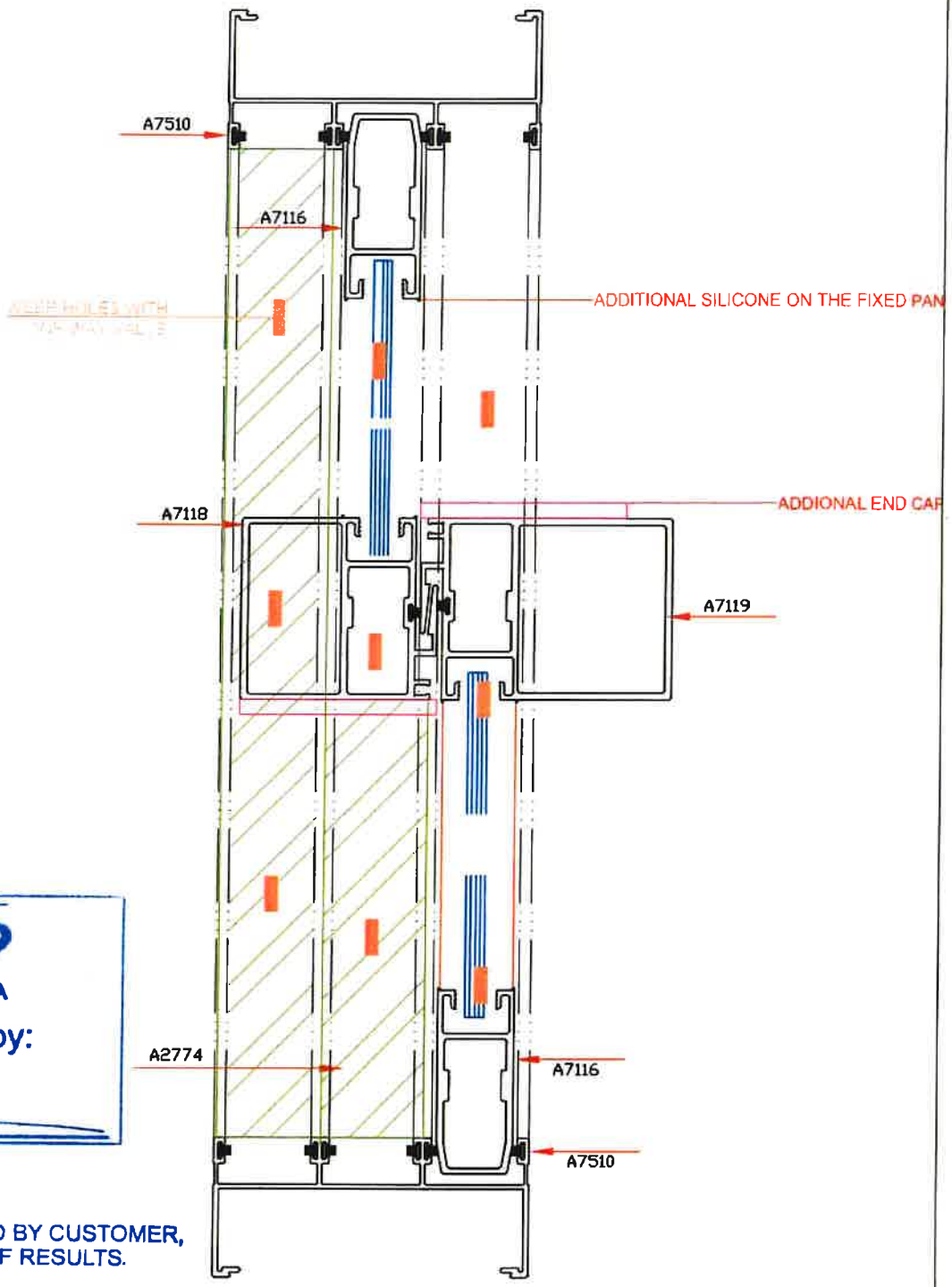
5 - 6 - 7 SECTION



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