



**A Z U M A**  
Design

# Laboratory Report

Date

19-October-2016

Customer **A-TECH AUSTRLIA**

258 Milperra Road Milperra NSW

Test No :

AZT0361.16



NATA Accredited Laboratory No : 15147

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

Azuma Design Pty Limited

38-44 Redfern Street, Wetherill Park, NSW 2164 Ph 02 9604 0255 E-Mail [info@azumadesign.com.au](mailto:info@azumadesign.com.au)

Accreditation Number : 15147  
Accredited for compliance with ISO/IEC 17025.  
This document shall not be reproduced, except in full.

# AZUMA DESIGN

## TESTING LABORATORY REPORT



SIGNATORIES	Reported by: Jayden Mudford <i>J. Mudford</i>
	Checked by: Ashley Horne <i>A. Horne</i>

Date : 19-Oct-16

Test No:

AZT0361.16

NATA Accredited Laboratory No : 15147

### Wind and Water Penetration Testing

Testing to AS2047 and as per test method AS4420.0 to .6

Manufacturer / Customer

A-TECH AUSTRLIA

Test Sample Data

Deflection Ratio

1  
250

Unit type	AWNING		
Unit code	0		
Size	H (mm)	1785	
	W (mm)	600	
Design Pa:			

Tested For	Y / N	Rating	Units
Structural Deflection Positive	Yes	2500	Pa
Structural Deflection Negative	Yes	1200	Pa
Air Infiltration	Yes	75	Pa
Operating Force Initial / Constant	No	Not Tested	N
Water Penetration	Yes	450	Pa
Ultimate Strength Positive	Yes	3000	Pa
Ultimate Strength Negative	Yes	2800	Pa

Test Unit Specifications

### Results

Sizes		H	W	Area sq m	Glass Type	Structural Framing Member	Span (mm)	Allowable Deflection	Deflection Result	Actual Ratio	Test Press (Pa)	Results
Frame		1785	600	1.07		Interlock P						
Sash	AWNING	1145	540	0.62		Interlock N						
	FIXED L/L	590	600	0.35		Mullion P						
						Mullion N						
						Transom P	480	1.92	0.15	3200	2500	P
Glass	Thickness (mm)	H	W	m²		Transom N	480	1.92	0.15	3200	1200	P
	AWNING	6.38	1047	432	0.45	Laminate						
	FIXED L/L	6.38	532	522	0.28	Laminate						
						H/L Trans P						
						H/L Trans N						
						H/L Mullion P						
						H/L Mullion N						
						Meet Stile P						
						Meet Stile N						
						Awning Stile P	1000	4.00	0.87	1149	2500	P
						Awning Stile N	1000	4.00	1.13	885	1200	P

Accreditation Number : 15147

Accredited for compliance with ISO/IEC 17025.

This document shall not be reproduced, except in full.



# AZUMA DESIGN

## TESTING LABORATORY REPORT

Test No: AZT0361.16

### Test equipments

The test equipment and methods used in the above test comply with the requirements of AS 4420.1-6.

### Test Specimen

See drawings at the end of this report.

### Test Methods

The test sample was fixed into the rig as outlined in AS 4420.1.

### Deflection Test

The test sample was subjected to both positive and negative pressure as prescribed in AS 4420.2. After the initial settling in of the unit at 50% of the required test pressure, the differential pressure was then applied slowly until the nominated design pressure was reached in positive. This process was then repeated for the negative.

### Results of Test

The test unit satisfied the requirements of AS 4420.2 in both the positive and negative deflection at the nominated design pressure.

### Observations

Nil

### Operating Force Test

A force gauge was attached to the operating handle of the sash to determine the force required to set the sash in motion and thereafter to maintain motion as per AS 4420.3.

#### Force in Newtons

		Opening Force	Closing Force
Initiating Movement	Sash 1	0	0
Sustaining Movement	Sash 1	0	0
Initiating Movement	Sash 2	0	0
Sustaining Movement	Sash 2	0	0
Initiating Movement	Sash 3	0	0
Sustaining Movement	Sash 3	0	0

### Results of test

Not tested

### Observations

Nil

# AZUMA DESIGN

## TESTING LABORATORY REPORT

Test No: AZT0361.16

### Air Infiltration Test

The test was first completely sealed as per AS 4420.4 to determine the air leakage of the test rig. It was then subjected to 75 Pa of both positive and negative pressure. Differential pressures were recorded. The test sample was then unsealed and subjected to 75 Pa of both positive and negative pressure. Differential pressures were recorded and air leakage then calculated. The actual leakage of the test sample was then determined.

Barometric pressure (Pbar): 995 Air temperature (°C) 24.1

Max Pressure (Pa)	SEALED		UNSEALED	
	Positive (Pa)	Negative (Pa)	Positive (Pa)	Negative (Pa)
75	8	5	9	8

Test Pressure	Pressure Direction	Building / Window Type	Allowable leakage flow L/s m <sup>2</sup>	Test results			
				Is <sup>+</sup> m <sup>2</sup> Positive	Is <sup>-</sup> m <sup>2</sup> Negative	Pos +	Neg -
75 Pa	+/-	Air conditioned	1.0	0.15	0.51	Passed	Passed
75 Pa	+	Non air conditioned	5.0	0.15	0.51	Passed	Passed

### Results of test

The test unit satisfied the requirement for an air-conditioned classification. The test unit was tested to AS 4420.4. The net flow readings are as per previous page.

### Observations

Nil



# AZUMA DESIGN

## TESTING LABORATORY REPORT

Test No: AZT0361.16

### WATER PENETRATION

Water was applied to the exterior of the test sample with no less than 0.05 ls-1m-2 for a period of five minutes at zero pressure. After five minutes, a nominated pressure was applied for fifteen minutes as per AS 4420.5.

Maximum pressure (Pa) applied for 15 minutes (Nominated pressure)

450

### Results of test

The test unit satisfied the requirement of AS 4420.5 in positive pressure at the nominated design pressure.

### Observations

Nil

### ULTIMATE STRENGTH TEST

The test sample shall be subjected to a smoothly increasing differential pressure. The pressure shall be conducted in both a positive and negative direction as per AS 4420.6. The test pressure shall be

Max. pressure reached for 10 seconds	
Positive	Negative
3000	2800

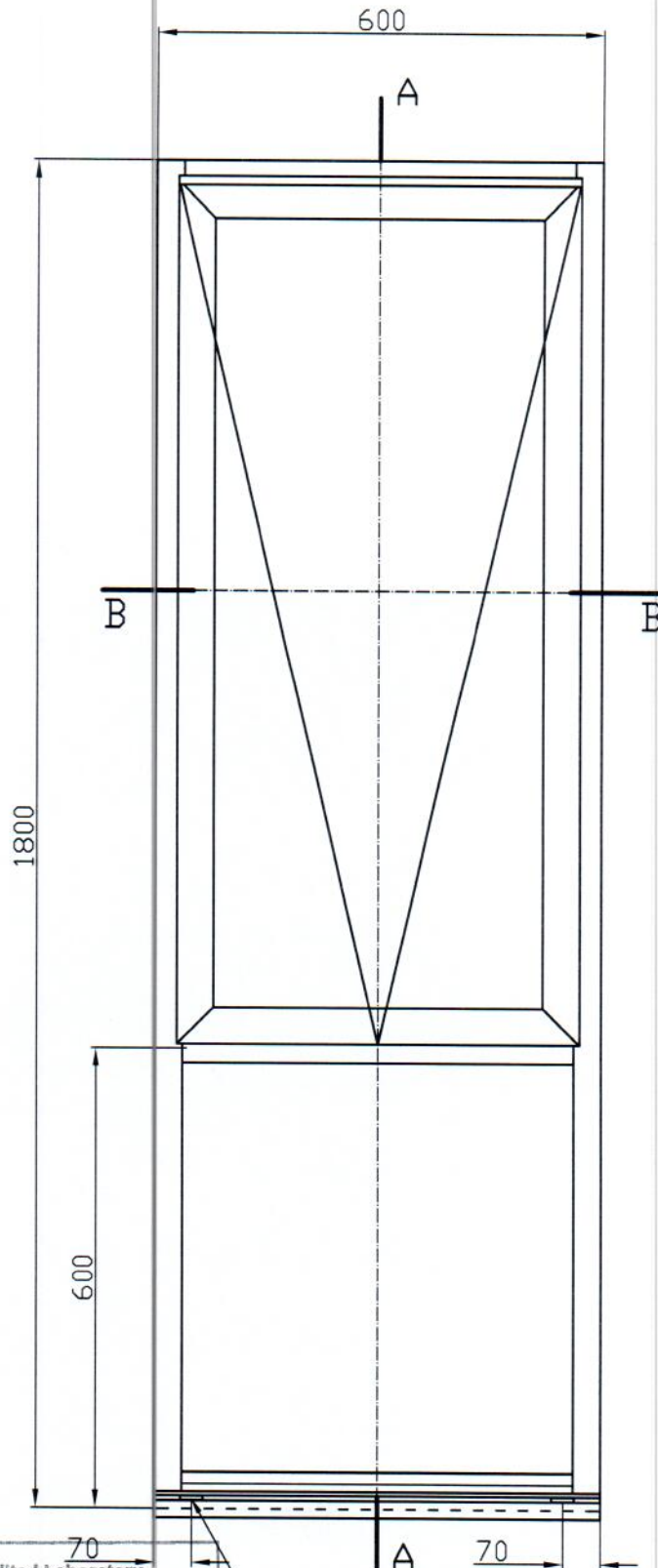
### Results of test :

	Y or N
Dislodgement of any glass?	No
Dislodgement of a frame or any part of a frame?	No
Removal of alignment with or without its framing sash from a frame?	No
Loss of support of a frame such as when it is unstable in its opening in the building structure?	No
Failure of any sash, locking device, fasteners or supporting stay which would allow an opening light to come open?	No

The test unit satisfied the requirement of AS 4420.6.

### Observations

Nil



- ☐ PRELIMINARY
- ☐ FOR APPROVAL
- ☐ FOR CONSTRUCTION
- ☒ AS BUILT

#### TITLE

COMMERCIAL AWNING  
WINDOW TEST SPECIMEN

#### DRAFTSMAN

BARTOSZ MAZUR

#### TESTING LABORATORY

AZUMA DESIGN

#### PROJECT NAME

AS2047 COMPLIANCE  
TEST

CHECK C.I	DATE 22/02/2017
--------------	--------------------

FORMAT A4	SCALE 1:10
--------------	---------------

DRAWING NO. CAW-T1	REV. 01
-----------------------	------------



A-Tech Australia  
Energy - Cooling - Ventilation

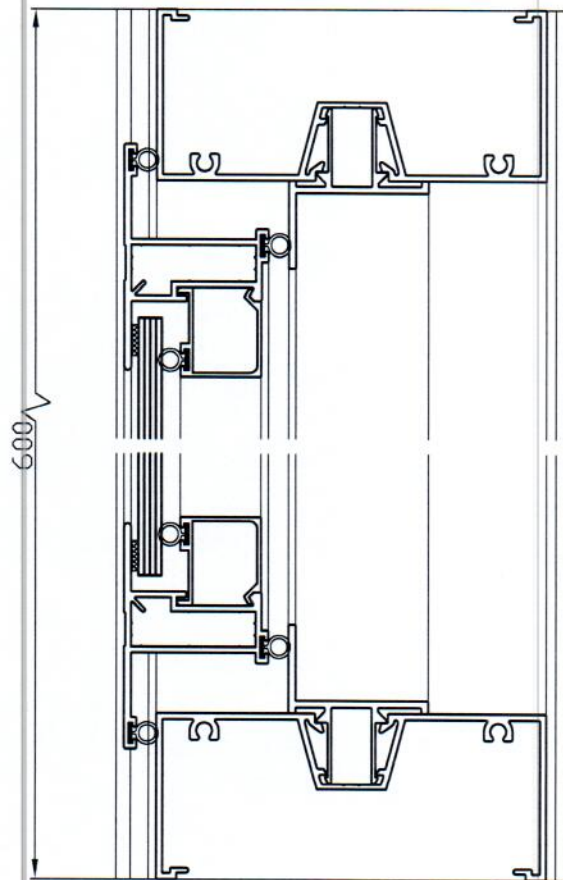
**NATA**  
NATA Accredited Laboratory  
Number: 15147

This laboratory is accredited by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its scope of accreditation. This document shall not be reproduced, except in full.

Checked by: AH

Rectangular  
drainage slot  
6x30mm

# B-B DETAIL



- ☐ PRELIMINARY
- ☐ FOR APPROVAL
- ☐ FOR CONSTRUCTION
- ☒ AS BUILT

## TITLE

COMMERCIAL AWNING  
WINDOWS TEST SPECIMEN  
SECTION B-B

## DRAFTSMAN

BARTOSZ MAZUR

## TESTING LABORATORY

AZUMA DESIGN

## PROJECT NAME

AS2047 COMPLIANCE  
TEST

CHECK	DATE
C.1	22/02/2017
FORMAT	SCALE
A4	1:2
DRAWING NO.	REV.
CAW-T3	01



NATA Accredited Laboratory  
Number: 15147

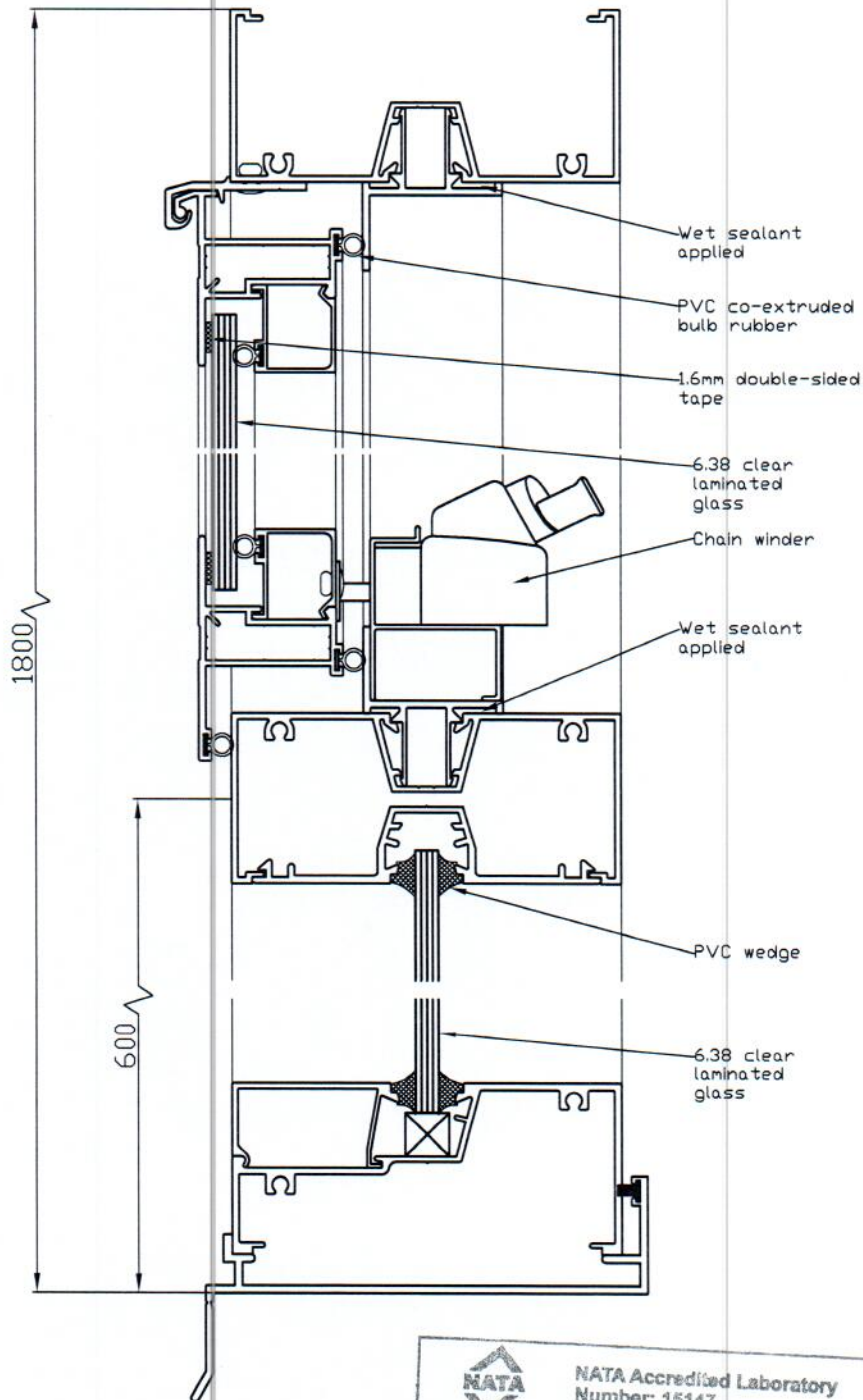
This laboratory is accredited by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its scope of accreditation. This document shall not be reproduced, except in full.

Checked by:

AM



## A-A DETAIL



- ☐ PRELIMINARY
- ☐ FOR APPROVAL
- ☐ FOR CONSTRUCTION
- ☒ AS BUILT

### TITLE

COMMERCIAL AWNING  
WINDOWS TEST SPECIMEN  
SECTION A-A

### DRAFTSMAN

BARTOSZ MAZUR

### TESTING LABORATORY

AZUMA DESIGN

### PROJECT NAME

AS2047 COMPLIANCE  
TEST



NATA Accredited Laboratory  
Number: 15147

This laboratory is accredited by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its scope of accreditation. This document shall not be reproduced, except in full.

Checked by:

AH

CHECK	DATE
C.I	22/02/2017
FORMAT	SCALE
A4	1:2
DRAWING NO.	REV.
CAW-T2	01



A-Tech Australia  
Design · Creativity · Innovation