



**A Z U M A**  
Design

# Laboratory Report

Date

20-October-2016

Customer

A-TECH AUSTRALIA

258 Milperra Road Milperra NSW 2214

Test No :

AZT0360.16



WORLD RECOGNISED  
ACCREDITATION

NATA Accredited Laboratory No : 15147

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

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Accreditation Number : 15147

Accredited for compliance with ISO/IEC 17025.

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# AZUMA DESIGN

## TESTING LABORATORY REPORT



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

Date :	20-Oct-16
Test No:	AZT0360.16

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 AUSTRALIA**

Test Sample Data

Deflection Ratio 1 / 250

Unit type	SLIDING WINDOW	
Unit code	0	
Size	H (mm)	1205
	W (mm)	1500
Design Pa:		

Tested For	Y / N	Rating	Units
Structural Deflection Positive	Yes	2000	Pa
Structural Deflection Negative	Yes	2000	Pa
Air Infiltration	Yes	75	Pa
Operating Force Initial / Constant	Yes	90/110	N
Water Penetration	Yes	200	Pa
Ultimate Strength Positive	Yes	3000	Pa
Ultimate Strength Negative	Yes	3000	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		1205	1500	1.81								
Sash	Sash 1 + 2	1090	725	0.79		Interlock P	1010	4.04	3.64	277	2000	P
						Interlock N	1010	4.04	3.62	279	2000	P
						Mullion P						
Glass	Thickness (mm)	H	W	m <sup>2</sup>		Mullion N						
	Sash 1 + 2	992	642	0.64	Laminate	Transom P						
						Transom N						
						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							
					Awning Stile N							



# AZUMA DESIGN

## TESTING LABORATORY REPORT

### Test equipments

Test No: AZT0360.16

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	40	40
Sustaining Movement	Sash 1	30	30
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

The test unit satisfied the requirement of AS 4420.3.

### Observations

Nil

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## TESTING LABORATORY REPORT

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### 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):	996	Air temperature (°C)	22	
Max Pressure (Pa)	SEALED		UNSEALED	
	Positive (Pa)	Negative (Pa)	Positive (Pa)	Negative (Pa)
75	31	32	64	80

Test Pressure	Pressure Direction	Building / Window Type	Allowable leakage flow L/s m <sup>2</sup>	Test results			
				Is <sup>-1</sup> m <sup>-2</sup> Positive	Is <sup>-1</sup> m <sup>-2</sup> Negative	Pos +	Neg -
75 Pa	+/-	Air conditioned	1.0	1.24	1.68	N/A	N/A
75 Pa	+	Non air conditioned	5.0	1.24	1.68	Passed	

### Results of test

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

### Observations

Nil



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## TESTING LABORATORY REPORT

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### 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)

200

Results of test

0

### 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	3000

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

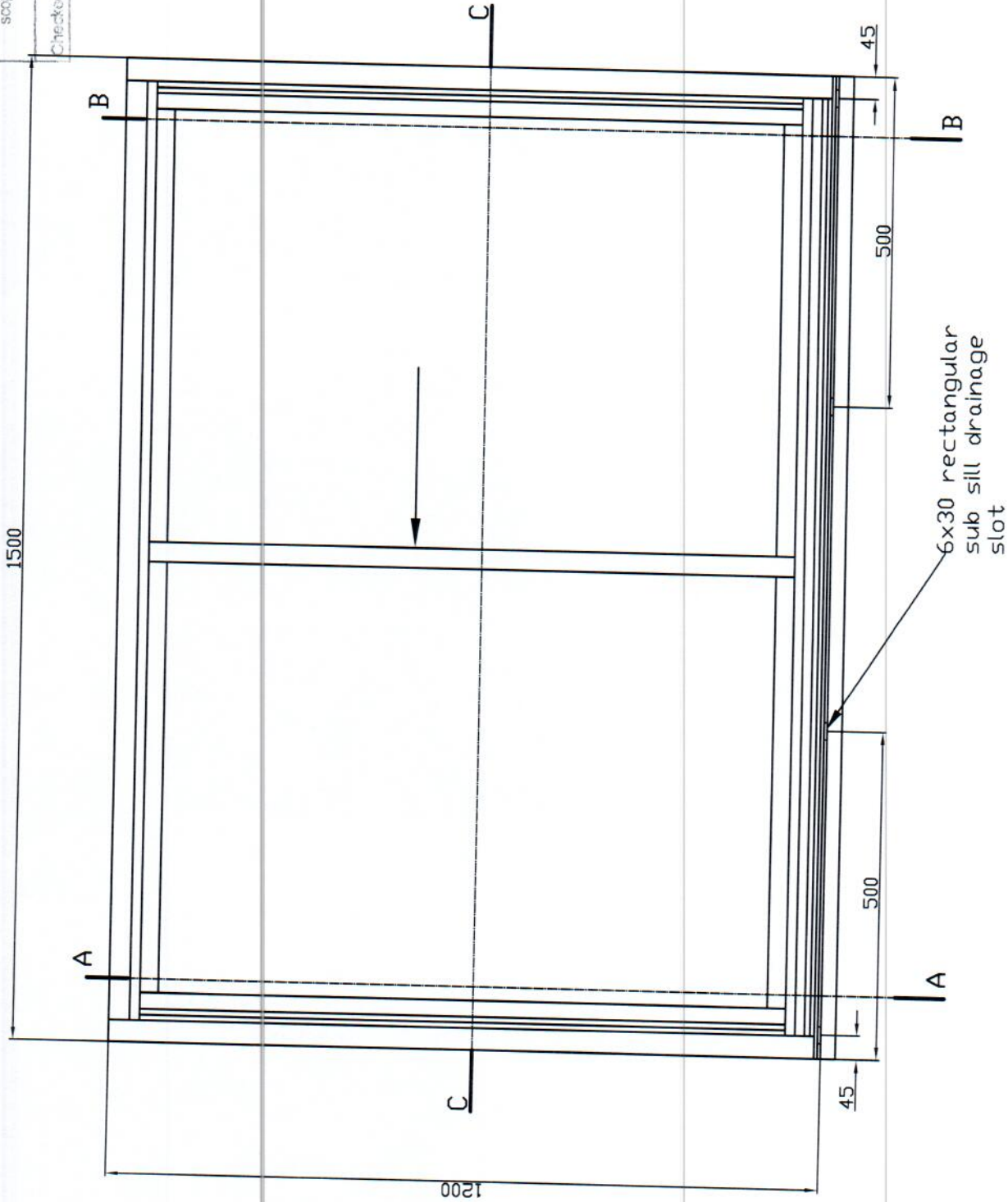
Nil



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- PRELIMINARY
- FOR APPROVAL
- FOR CONSTRUCTION
- AS BUILT

TITLE

COMMERCIAL SLIDING  
WINDOWS TEST SPECIMEN

DRAFTSMAN

BARTOSZ MAZUR

TESTING LABORATORY

AZUMA DESIGN

PROJECT NAME

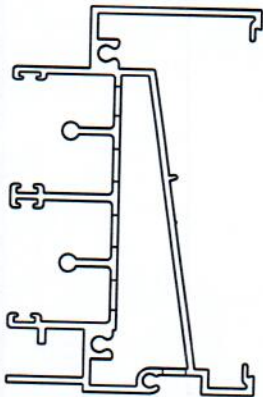
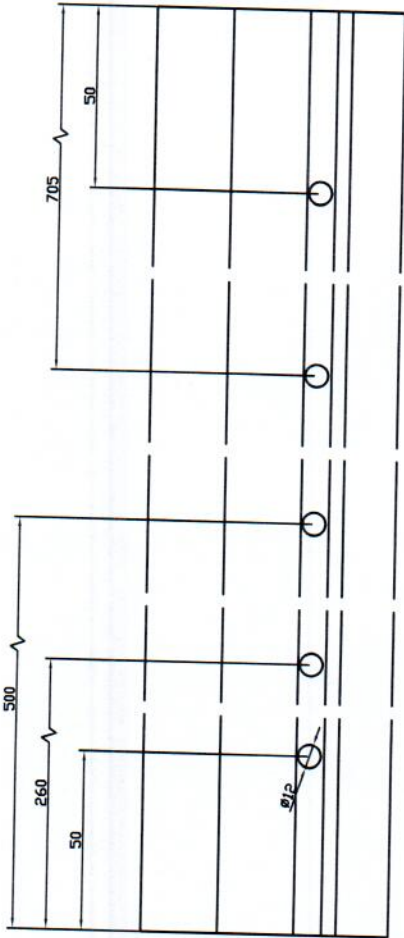
AS2047 COMPLIANCE  
TEST

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C.1	22/02/2017

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DRAWING NO.	REV.
CSW-T1	01

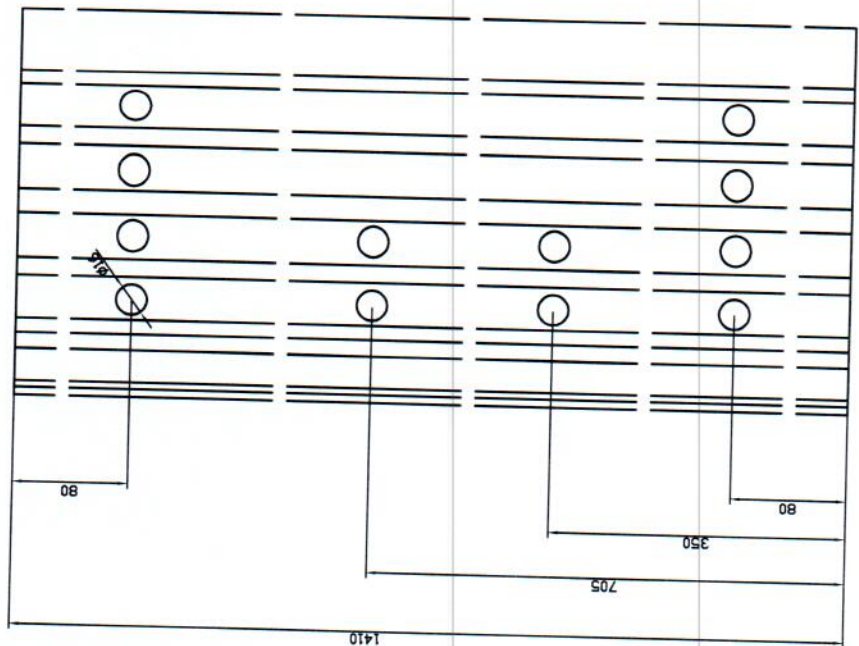




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- PRELIMINARY
- FOR APPROVAL
- FOR CONSTRUCTION
- AS BUILT

TITLE  
 COMMERCIAL SLIDING  
 WINDOWS TEST SPECIMEN  
 SILL WEEPHOLES DETAIL

DRAFTSMAN  
 BARTOSZ MAZUR

TESTING LABORATORY  
 AZUMA DESIGN

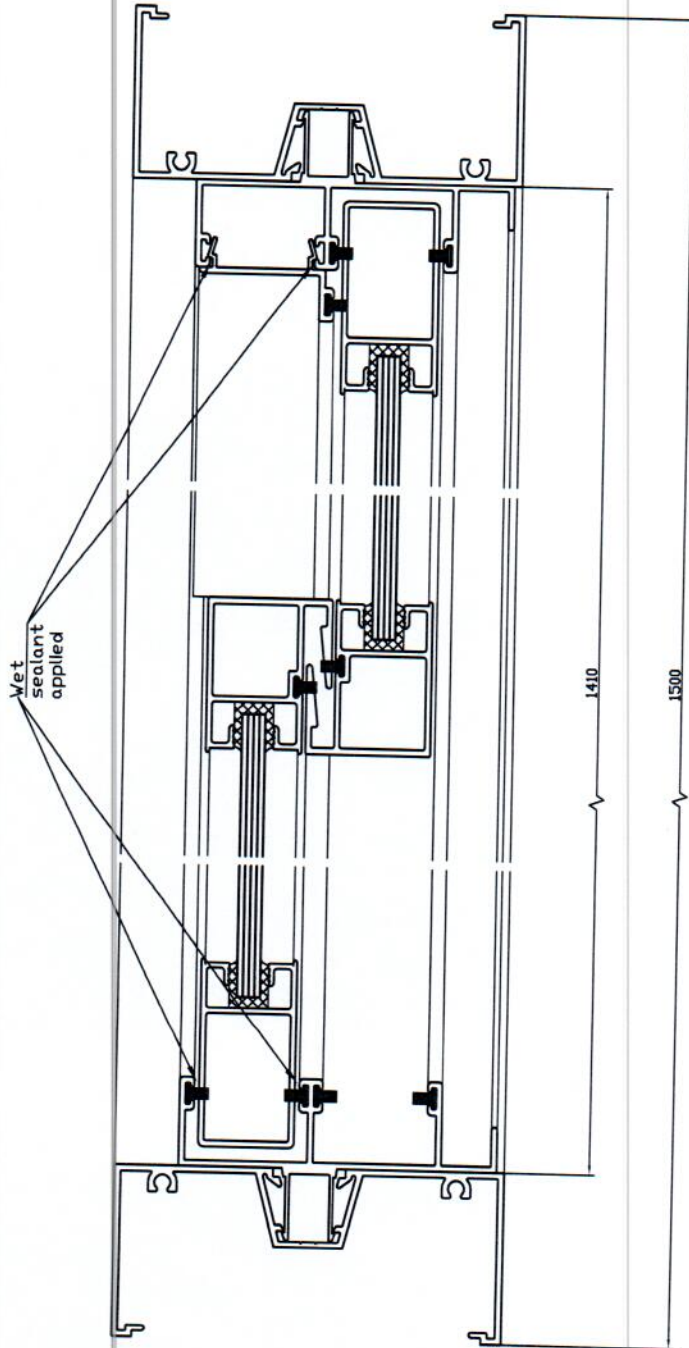
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 AS2047 COMPLIANCE  
 TEST

CHECK	DATE
C.1	22/02/2017
FORMAT A4	SCALE 1:2
DRAWING NO. CSW-T4	REV. 01





C-C DETAIL



- PRELIMINARY
- FOR APPROVAL
- FOR CONSTRUCTION
- AS BUILT

TITLE  
COMMERCIAL SLIDING  
WINDOWS TEST SPECIMEN  
SECTION C-C

DRAFTSMAN  
BARTOSZ MAZUR

TESTING LABORATORY  
AZUMA DESIGN

PROJECT NAME  
AS2047 COMPLIANCE  
TEST

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



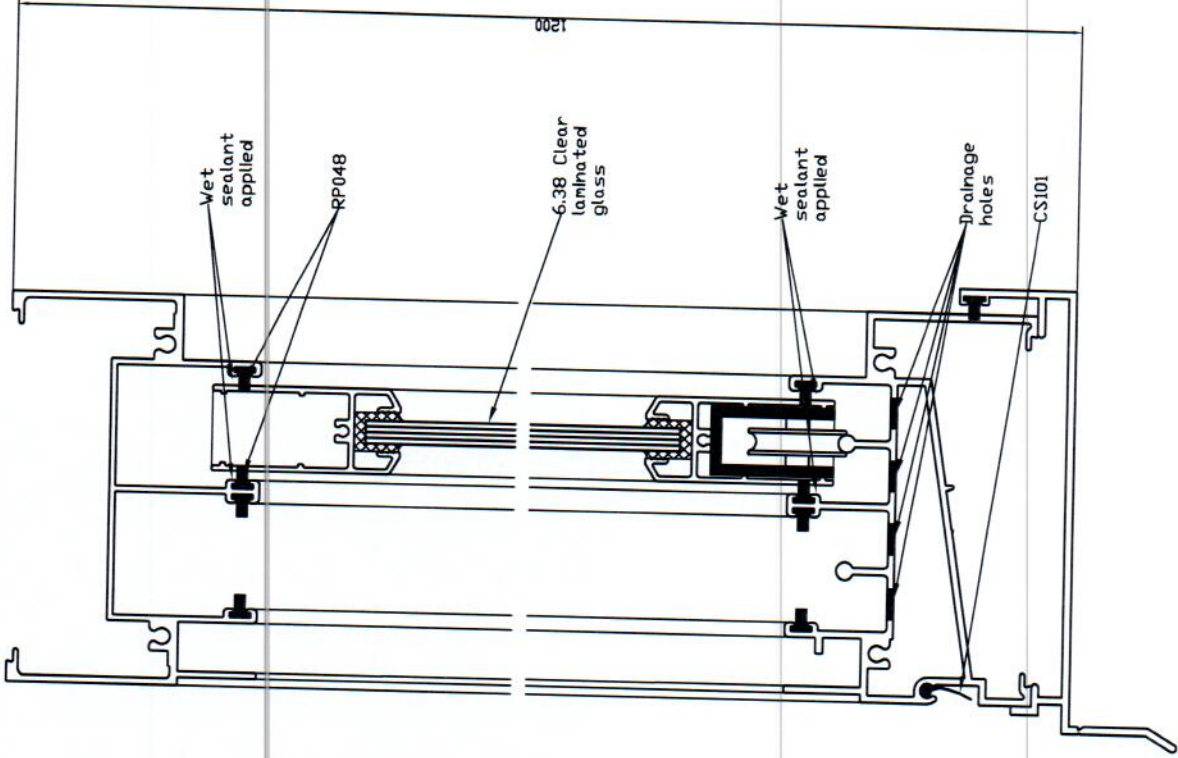
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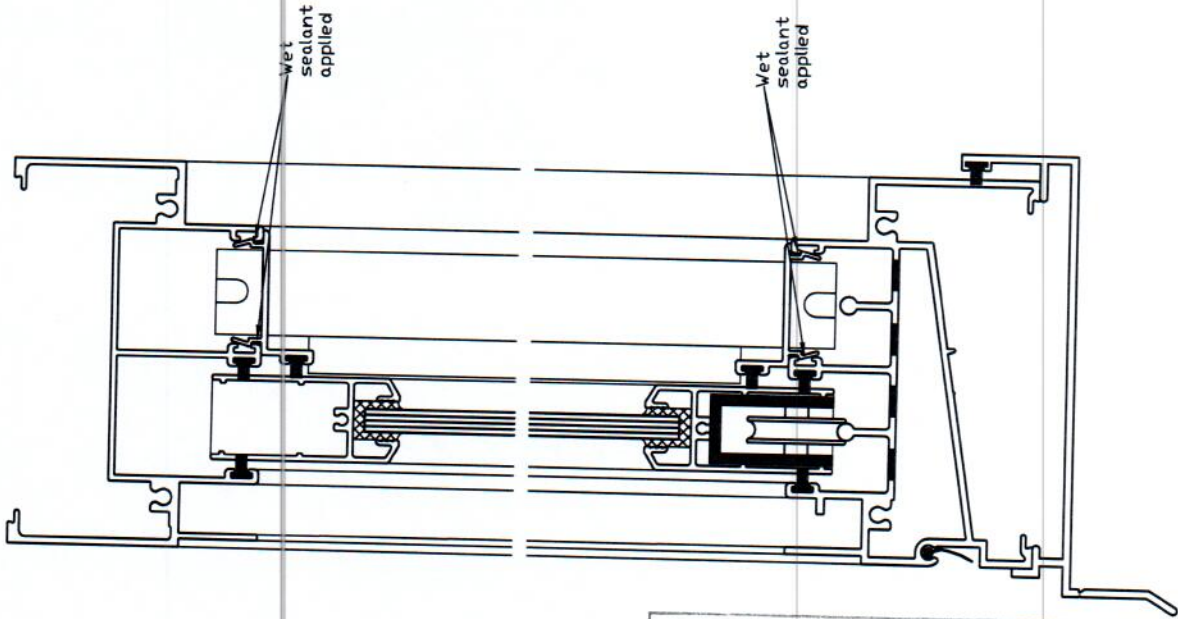
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A-A DETAIL



B-B DETAIL



<input type="checkbox"/> PRELIMINARY	<input type="checkbox"/> FOR APPROVAL	<input type="checkbox"/> FOR CONSTRUCTION	<input checked="" type="checkbox"/> AS BUILT
TITLE			
COMMERCIAL SLIDING WINDOWS TEST SPECIMEN SECTIONS A-A AND 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.	CSW-T2	01



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