



# Laboratory Report

Date

22-April-2008

Customer PVC WINDOWS

27/8 RIVERLAND DRIVE, LOGANHOLME, BRISBANE  
QLD 4129

Test No :

AZT0044.08.xls



NATA Accredited Laboratory No : 15147

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# AZUMA DESIGN

## TESTING LABORATORY REPORT



SIGNATORIES	Reported by: Robert Irwin <i>[Signature]</i>
	Checked by: Nathan Olsen <i>[Signature]</i>

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Testing to AS 2047.1 as per test method 4420.0 to .6

### Wind and Water Penetration Testing

Manufacturer / Customer

PVC WINDOWS

Test Sample Data

Deflection Ratio

1  
180

Unit type	casement/fixed/casement	
Unit code	6040 series	
Size	H (mm)	1800
	W (mm)	2700
Design Pa:	950	

Tested For	Y / N	Rating	Units
Structural Deflection ?	Yes	950	Pa
Air Infiltration ?	Yes	75/150	Pa
Operating Force Initial / constant ?	No	N/A	N
Water Penetration ?	Yes	300	Pa
Ultimate Strength ?	Yes	1500	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	1800	2700	4.86		Interlock P	0		0.00			
Sash	casement 1 & 2	1735	705	1.22	Interlock N	0		0.00			
	fixed	1790	1280	2.29	Mullion P	1660	9.22	8.99	185	950	P
		0	0	0.00	Mullion N	1660	9.22	8.44	185	950	P
Glass	Thickness (mm)	H	W		Transom P	0		0.00			
	casement 1 & 2	4-16-4	1587	562	0.89	low.E. clear float	Transom N	0		0.00	
	fixed	4-16-4	1692	1142	1.93	low.E. clear float	H/L Trans P	0		0.00	
		0	0.00	0	0	0.00	H/L Trans N	0		0.00	
		0	0.00	0	0	0.00	H/L Mullion P	0		0.00	
		0	0.00	0	0	0.00	H/L Mullion N	0		0.00	
							Meet Style P	0		0.00	
						Meet Style N	0		0.00		
						Spare	0		0.00		
						Spare	0		0.00		

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### 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 unit was fixed into the rig as outlined in AS 4420.1.

### Deflection Test

The unit was subjected to both positive and Negative pressure as prescribed in AS 4420.2. After the initial settling in of the unit at the 50% of the required test pressure, the differential pressure was then applied

### Results of Test

The test unit satisfied the requirements of AS 2047.1 in both the positive and negative deflection at the nominated design pressure.

### Observations

0

### Air Infiltration Test

The test was first completely sealed against air leakage as per AS 4424.4 to determine the air leakage of the test rig. It was then subjected to 75 Pa of both positive and negative pressure, and 150 Pa of both negative and positive pressure. Differential pressures were recorded. The test unit 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 unit was then determined.

Barometric pressure (Pbar):	1018	Air temperature (°C)	20	
Max Pressure (Pa)	SEALED		UNSEALED	
	Positive (Pa)	Negative (Pa)	Positive (Pa)	Negative (Pa)
	75	2	3	2
150	3	3	4	4

Test Pressure	Pressure Direction	Building / Window Type	Allowable leakage flow l/s.m <sup>2</sup>	Test results			
				l/s.m <sup>2</sup>	l/s.m <sup>2</sup>	Pos +	Neg -
75 Pa	+/-	Air conditioned	1.0	0.14	0.00	Passed	Passed
75 Pa	+	Non air conditioned	5.0	0.14	0.00	Passed	N/A
150 Pa	+/-	Air conditioned	1.6	0.05	0.05	Passed	Passed
150 Pa	+	Non air conditioned	8.0	0.05	0.05	Passed	N/A

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### Results of test

The test unit satisfied the requirement of AS 2047. The test unit was tested to AS 4420.4. The net flow readings are as follows:

### Observation

0

### Operating Force

#### OPERATING FORCE (N)

		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

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.

### Results of test

0

### Observations

0

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### WATER PENETRATION

Water was applied to the exterior of the test unit 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)

300

#### Results of test

The test unit satisfied the requirement of AS 2047 in positive pressure at the nominated design pressure.

#### Observations

After one minute @ 450pa, water leaked from both bottom corner glazing beads of fixed sash.

### ULTIMATE STRENGTH TEST

A pressure nominated on part 1 of this report and determined by AS 2047, table 2.5 was applied to the test unit for a period of 10 seconds as per AS 4420.6.

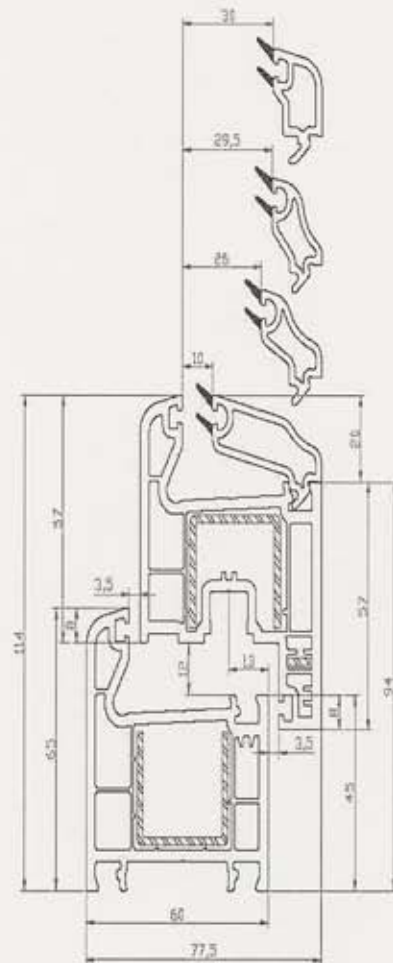
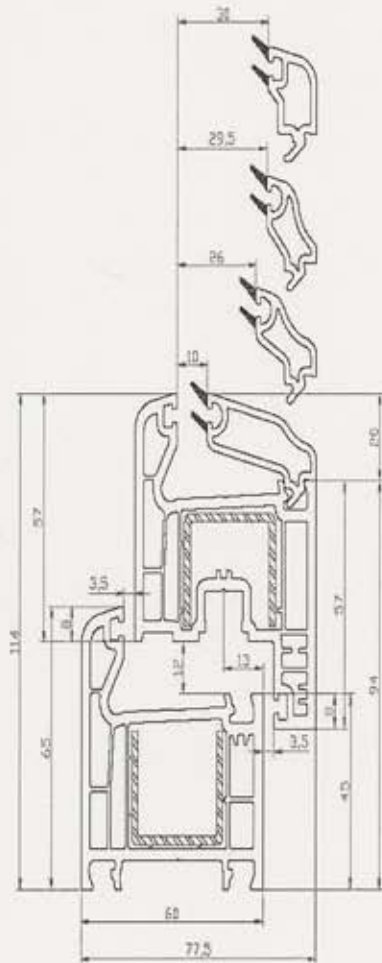
Max. pressure reached for 10 seconds	
Positive	Negative
1500	1500

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
<b>The test unit satisfied the requirement of AS 2047.</b>	

#### Observations

0

6043 series casement window



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Checked by:

*Nathan Chan*

