



# Laboratory Report

Report date

26-June-2014

Customer

Shanghai Superhouse Building Material Co Ltd

10 Hang Fan Road, pudong New Area, Shanghai, China

Test No :

AZT0146.14.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>

Test Date:

02-Sep-11
Test No:
AZT0146.14.xls

NATA Accredited Laboratory No : 15147

### Wind and Water Penetration Testing

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

Manufacturer / Customer

Shanghai Superhouse Building Material Co Ltd

Test Sample Data

Deflection Ratio 180

Unit type	Awning	
Unit code	ACYY 100 Series	
Size	H (mm)	1500
	W (mm)	900
Design Pa:		

Tested For	Y / N	Rating	Units
Structural Deflection ?	No	N/A	Pa
Air Infiltration ?	Yes	75/150	Pa
Operating Force Initial / constant ?	No	N/A	N
Water Penetration ?	Yes	450	Pa
Ultimate Strength ?	Yes	4500	Pa

Test Unit Specifications

Results

Frame	Sizes			Area sq m	Glass Type	Structural Framing Member	Span (mm)	Allowable Deflection	Deflection Result	Actual Ratio	Test Press (Pa)	Results
	H	W										
Frame		1500	900	1.35	Toughened	Interlock P						
	Sash	Awning	1455	855		1.24	Interlock N					
						Mullion P						
						Mullion N						
						Transom P						
Glass	Thickness (mm)	H	W			Transom N						
	Awning	5-12-5	1355	715		0.97	H/L Trans P					
						H/L Trans N						
						H/L Mullion P						
						H/L Mullion N						
					Meet Style P							
					Meet Style N							
					Spare							
				Spare								

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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

### Results of Test

### Observations

DID NOT TEST

### Air Infiltration Test

The test was first completely sealed against air leakage 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, 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):	1019	Air temperature (°C)	18	
Max Pressure (Pa)	SEALED		UNSEALED	
	Positive (Pa)	Negative (Pa)	Positive (Pa)	Negative (Pa)
75	5	4	10	10
150	10	9	21	22

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	0.63	0.80	Passed	Passed
75 Pa	+	Non air conditioned	5.0	0.63	0.80	Passed	
150 Pa	+/-	Air conditioned	1.6	0.97	1.16	Passed	Passed
150 Pa	+	Non air conditioned	8.0	0.97	1.16	Passed	

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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

NIL

### Operating Force

#### OPERATING FORCE (N)

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

### Results of test

### Observations

DID NOT TEST

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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)

450

### Results of test

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

### Observations

NIL

### ULTIMATE STRENGTH TEST

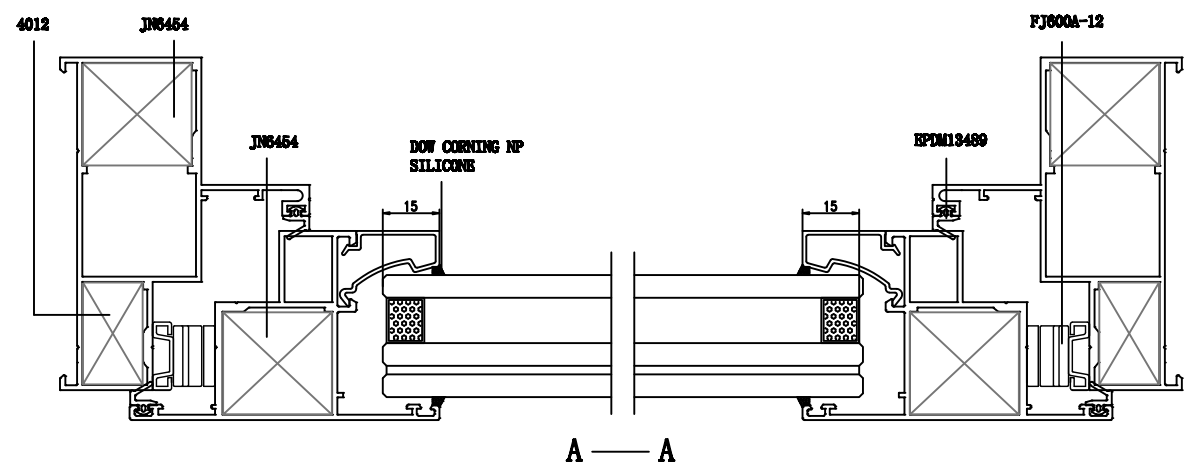
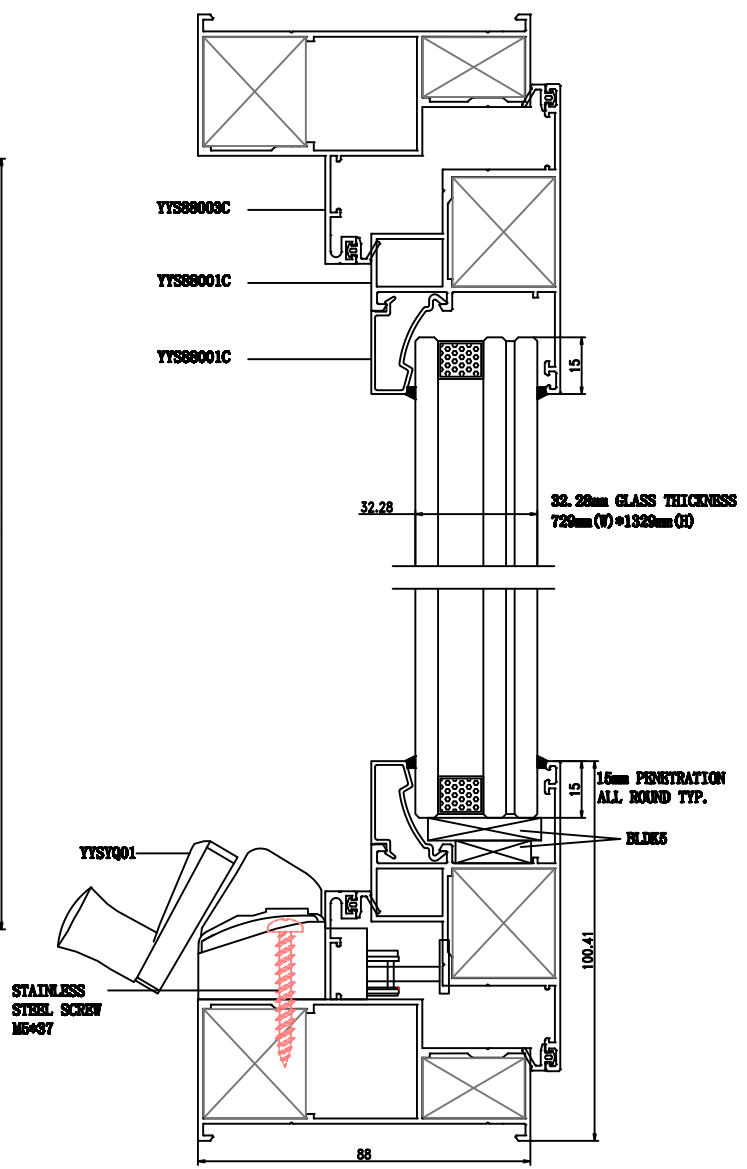
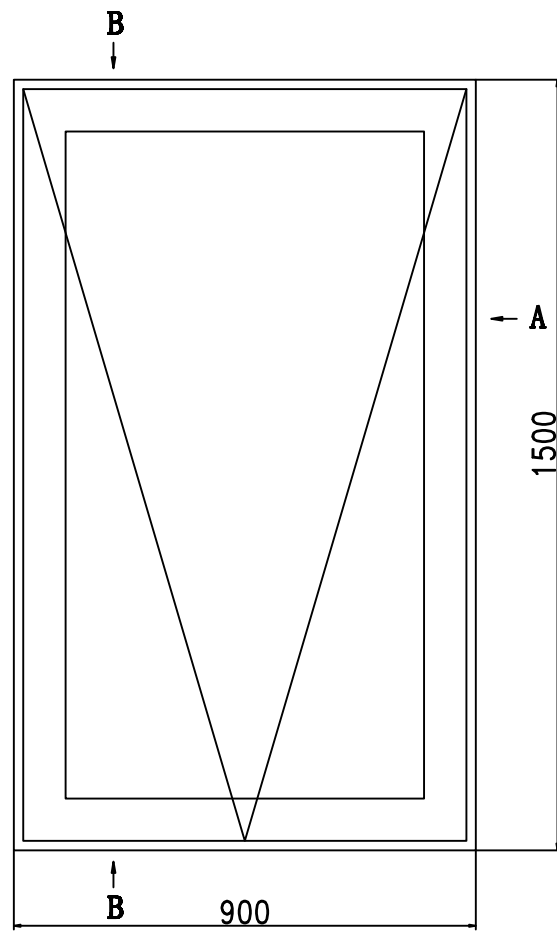
A pressure nominated on part 1 of this report and determined by AS 2047, table 2.5 was applied to the test unit for a period of 10 seconds as per AS 4420.6.

Max. pressure reached for 10 seconds	
Positive	Negative
4500	4500

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 2047.	

### Observations

NIL



**SHANGHAI SUPERHOUSE BUILDING MATERIAL CO.,LTD**

6	DRW: SH001	DESIGNER: WANG	SP88 AWNING WINDOW IMPACT TEST	6
	DATE: 2014-7-26	APPROVAL: JIE LI	TOTAL: 1 NO. 1	
	SCALE: 1:10	SANCIFIER: SHEN	UNITS: (MM)	

A

B

C

D