AZUMA
Design

Laboratory Report

Date 26-August-2011

Customer ALUPLAST GmbH

Kunststoffprofile, Auf der Breit 2, D-76227 Karlsruhe

Test No : AZT0146.11.xls

NATA
WORLD RECOGNISED ACCREDITATION

NATA Accredited Laboratory No : 15147

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AZUMA DESIGN

TESTING LABORATORY REPORT

NATA
WORLD RECOGNISED ACCREDITATION

SIGNATORIES	
Reported by :	Nathan Olsen
Checked by :	Robert Irwin

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Wind and Water Penetration Testing

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

Manufacturer / Customer **ALUPLAST GmbH**

Test Sample Data

Deflection Ratio 1/180

Unit type	Sliding/Fixed Window	
Unit code	60mm Sliding Window	
Size	H (mm)	1200
	W (mm)	2500
Design Pa:	1500	

Tested For	Y / N	Rating	Units
Structural Deflection ?	Yes	1500	Pa
Air Infiltration ?	Yes	75/150	Pa
Operating Force Initial / constant ?	Yes	90/110	N
Water Penetration ?	Yes	150	Pa
Ultimate Strength ?	Yes	3300	Pa

Test Unit Specifications **Results**

Sizes			H	W	Area sq m	Glass Type
Frame			1200	2500	3.00	
Sash	Sliding		1085	1225	1.33	
	Fixed		1085	1225	1.33	
Glass	Thickness (mm)		H	W		
	Sliding	4,12,4	970	1113	1.08	Clear Float
	Fixed	4,12,4	970	1113	1.08	Clear Float

Structural Framing Member	Span (mm)	Allowable Deflection	Deflection Result	Actual Ratio	Test Press (Pa)	Results
Interlock P	1025	5.69	2.14	479	1500	P
Interlock N	1025	5.69	2.69	381	1500	P
Mullion P						
Mullion N						
Transom P						
Transom N						
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

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 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 2047.1 in both the positive and negative deflection at the nominated design pressure.

Observations

NIL

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):*	1018	**Air temperature** *(° C)*	20

Max Pressure *(Pa)*	**SEALED**		**UNSEALED**	
	Positive *(Pa)*	**Negative** *(Pa)*	**Positive** *(Pa)*	**Negative** *(Pa)*
75	**13**	**10**	**21**	**21**
150	**32**	**28**	**56**	**63**

Test Pressure	**Pressure Direction**	**Building / Window Type**	**Allowable leakage flow L/s m²**	**Test results**			
				$ls^{-1}m^{-2}$ Positive	$ls^{-1}m^{-2}$ Negative	**Pos +**	**Neg -**
75 Pa	**+/-**	Air conditioned	**1.0**	**0.30**	**0.44**	*Passed*	*Passed*
75 Pa	+	Non air conditioned	**5.0**	**0.30**	**0.44**	*Passed*	
150 Pa	**+/-**	Air conditioned	**1.6**	**0.56**	**0.81**	*Passed*	*Passed*
150 Pa	+	Non air conditioned	**8.0**	**0.56**	**0.81**	*Passed*	

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	55	26
Sustaining Movement	Sash 1	15	16
Initiating Movement	Sash 2		
Sustaining Movement	Sash 2		
Initiating Movement	Sash 3		
Sustaining Movement	Sash 3		

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

The test unit satisfied the requirement of AS 2047.

Observations

NIL

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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)

150

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**
3300	**3300**

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

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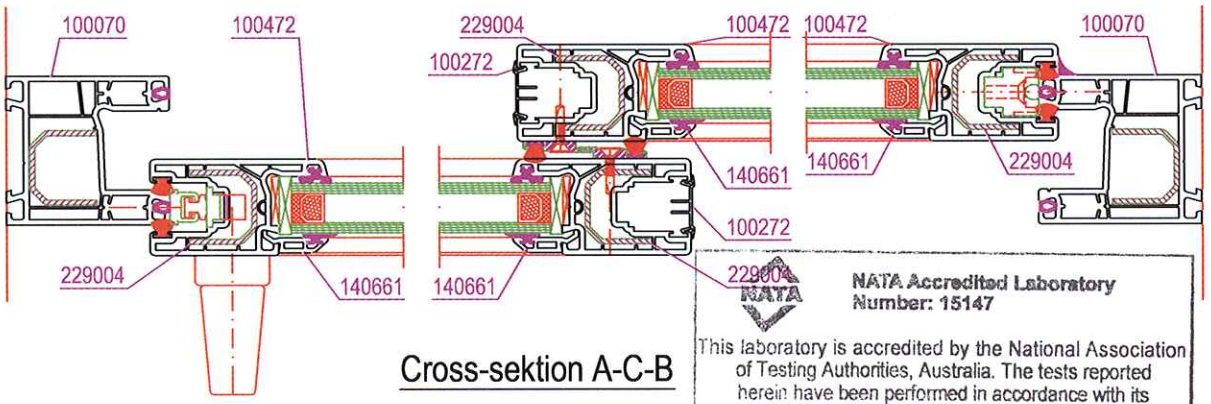
Slinding-Window SF60
Schema A

Position 4
Maßstab: ~
Datum: 2011-08



Cross-sektion A-C-B

NATA Accredited Laboratory
Number: 15147

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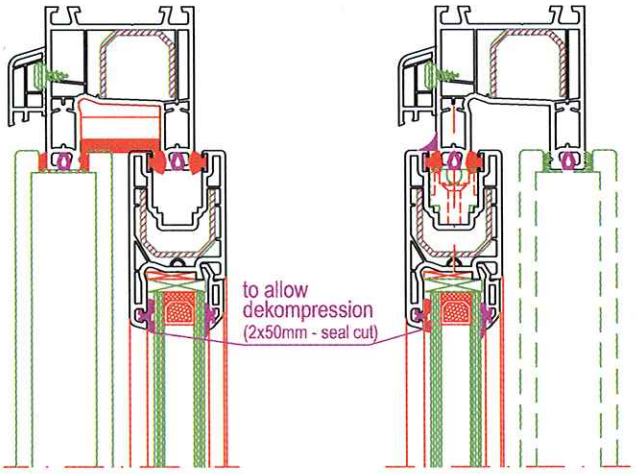
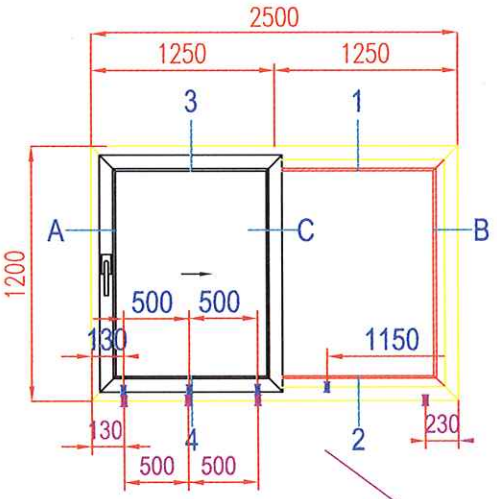
Checked by:

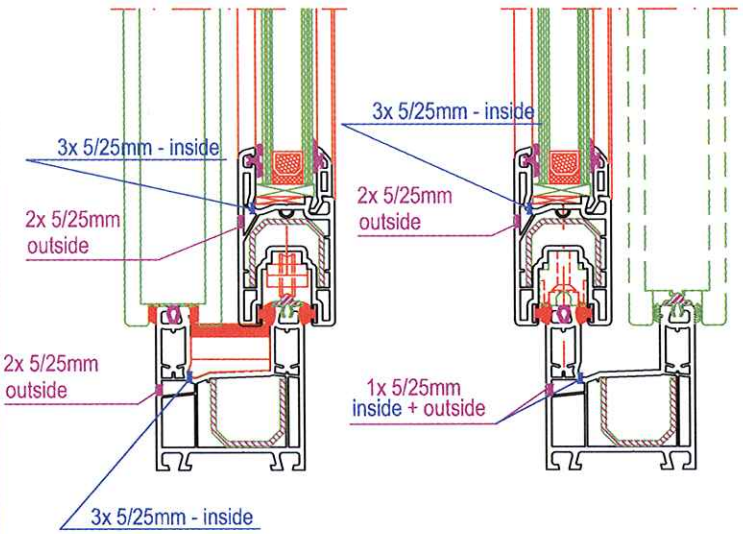


Hardware: Roto



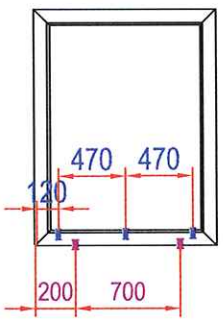
Drainage

Frame
Sliding+ Fix Sash



Sliding-Sash
Cross-sektion 3-4

Sliding-Sash
Cross-sektion 1-2



PKSI60_110523_SchemeA*
Technische Änderungen vorbehalten!