



Laboratory Report

Date

15-November-2011

Customer **KOMMERLING**

Kreditorenbuchhaltung Mulheimerstr,26 D53840
Troisdorf Germany

Test No :

AZT0173.11.xls



NATA Accredited Laboratory No : 15147

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TESTING LABORATORY REPORT



SIGNATORIES	Reported Nathan Olsen by :
	Checked Robert Irwin by :

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Wind and Water Penetration Testing

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

Manufacturer / Customer

KOMMERLING

Test Sample Data

Deflection Ratio

1

250

Unit type	TILT & TURN/FIXED	
Unit code	GOLD C70	
Size	H (mm)	1550
	W (mm)	1800
Design Pa:	4000	

Tested For	Y / N	Rating	Units
Structural Deflection ?	Yes	4000	Pa
Air Infiltration ?	Yes	75/150	Pa
Operating Force Initial / constant ?	No	N/A	N
Water Penetration ?	Yes	1000	Pa
Ultimate Strength ?	Yes	Pos 6600 Neg 6800	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	Fixed Sash 1	1550	1800	2.79		Interlock P						
	Hinged Sash 2	1550	900	1.40		Interlock N						
Sash	Fixed Sash 1	1470	830	1.22		Mullion P	1485	5.94	2.83	525	4000	P
	Hinged Sash 2					Mullion N	1485	5.94	3.29	525	4000	P
Glass	Thickness (mm)	H	W			Transom P						
	Fixed Sash 1	4/1.52/4	1450	810	1.17	Laminated						
	Sash 2	4/1.52/4	1360	720	0.98	Laminated						
						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 (<i>Pbar</i>):		1017		Air temperature (<i>°C</i>)		26	
Max Pressure <i>(Pa)</i>	SEALED		UNSEALED				
	Positive (<i>Pa</i>)	Negative (<i>Pa</i>)	Positive (<i>Pa</i>)	Negative <i>(Pa)</i>			
75	3	8	5	11			
150	9	17	13	23			

Test Pressure	Pressure Direction	Building / Window Type	Allowable leakage flow L/s m ²	Test results			
				Is ⁻¹ m ⁻² Positive	Is ⁻¹ m ⁻² Negative	Pos +	Neg -
75 Pa	+/-	Air conditioned	1.0	0.17	0.16	Passed	Passed
75 Pa	+	Non air conditioned	5.0	0.17	0.16	Passed	
150 Pa	+/-	Air conditioned	1.6	0.20	0.22	Passed	Passed
150 Pa	+	Non air conditioned	8.0	0.20	0.22	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		

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 Standard does not require operating force testing for this type of window design.

Observations

Test Not Performed

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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)

1000

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
6600	6800

Results of test :

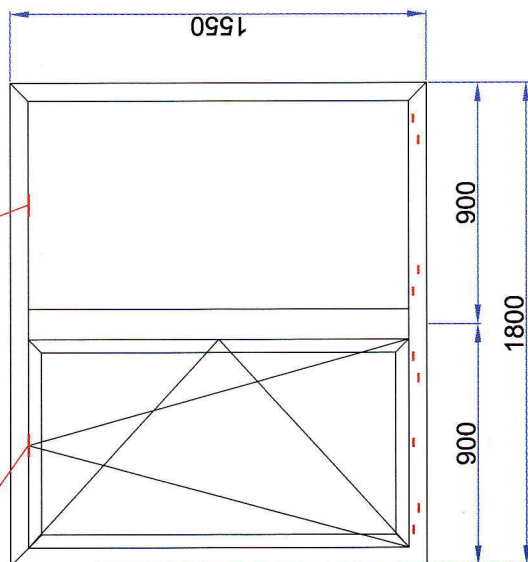
	Y or N
Dislodgement of any glass?	No
Dislodgement of a frame or any part of a frame?	No
Removal of alignment with or without its framing sash from a frame?	No
Loss of support of a frame such as when it is unstable in its opening in the building structure?	No
Failure of any sash, locking device, fasteners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

The test unit satisfied the requirement of AS 2047.

Observations

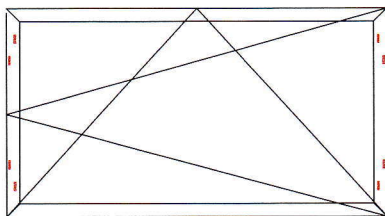
NIL

Frame :
100mm pressure
equalization on top

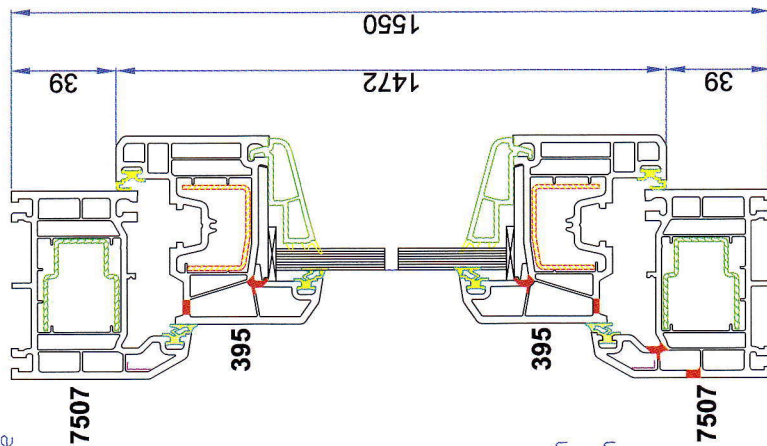


Frame :
2 drainage slots 25x5mm
outside
3 drainage slots 25x5mm
inside

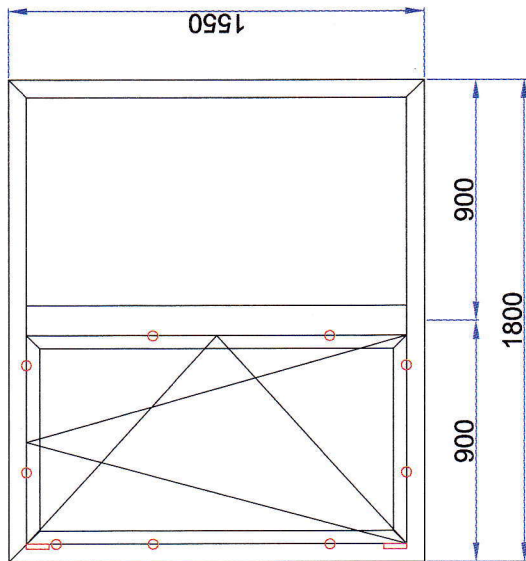
Sash pressure
equalization :
2 slots 25x5mm outside
2 slots 25x5mm inside



Sash :
2 drainage slots 25x5mm
outside
2 drainage slots 25x5mm
inside

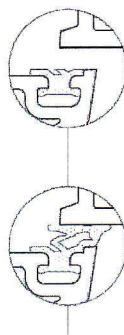


Hardware
Tilt & Turn
MACO
9 locking points +
corner bearing +
stayarm bearing



PCE
weatherseal

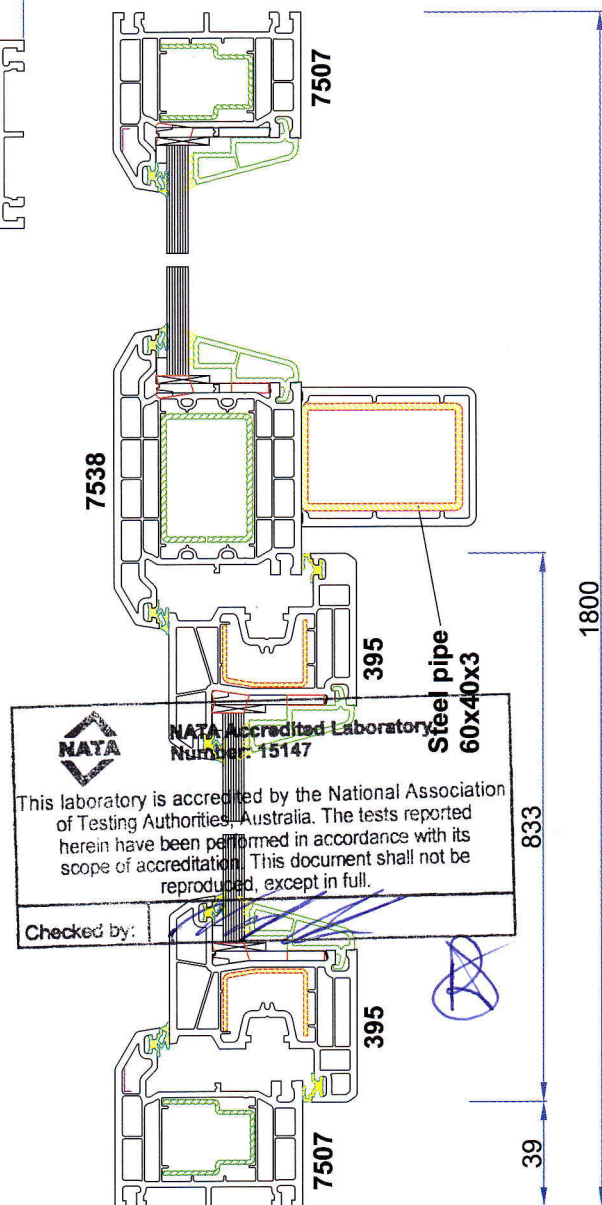
Out of for
pressure relief



Glass sash 713 x 1352mm
Glass fixed light 811 x 1450mm
4MM Clear 'Float
1.52mm Cts inner layer from
Dupond
4mm Clear Float

DRAINAGE AND PRESSURE EQUALIZATION MUST BE
DONE AS PER KÖMMERING RIGHTLINES MANUAL
GOLD C70
TILT & TURN HARDWARE AS PER HARDWARE
DELIVERER RIGHTLINES
SECURITY LOCKINGPLATES MUST BE USED ALL
AROUND

Cyclon 3



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Checked by: