China National Building Material Industry Hardware And Plumbing Equipment Quality Supervision And Test Center
4 Dahongmen West Road, Fengtai District, Bejing, China

Test Report

Test Report No. GTDM1209012

AHM126 aluminum awning window with fixed

Client: YINTEC

24- September-2012

Prepared by	
Verified by	
Approved by:	

CNAS L1449

China National Accreditation Service for Conformity Assessment, accredits this Laboratory. The tests reported herein have been performed in accordance with its scope of accreditation Accreditation No.L1449

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TESTS: The specimen was submitted for testing in accordance with AS4420.0-6 1996 *Windows – Methods of test,* and evaluation in accordance with AS2047 1999 *Windows in buildings - Selection and installation.*

Manufacturer: Guangya Curtain Wall &Window Door System Engineering Co.,Ltd.

Address: Ma An Gang Industrial Zone, Guanyao Town ,Nanhai District, Foshan City, Guangdong Province, China.

Specimen model information: 1600W×2700H AHM126 Aluminum Awning Window manufactured by Guangya Curtain Wall &Window Door System Engineering Co.,Ltd.

NOTE: This laboratory has not selected the test specimens. The reported test results apply only to the tested specimen and may be not applicable to the other specimens of the same product.

Information:

Test Item	Tested "✓"	Rating	Units
Structural Deflection	✓	2100	Pa
Operating force	-	N/A	N
Air Infiltration	✓	75/150	Pa
Water Penetration Resistance	✓	300	Pa
Ultimate Strength	✓	5000	Pa

Test Equipments: The test equipment and methods list in the above test comply with the requirements of AS4420.1-6

RESULTS:

The results for compliance with the specification are shown in the following pages under the relevant clause numbers.

Information:

Name of Sample		aluminum awning window with fixed	Brand	广亚
Type		126set	Model （mm）	1600×2700×126
Glass Varieties		Flat Glass	span（mm）	2575
Glass Inlaid Materials		Sealant	Seal between sections	Rubber
Window		W（mm）	H（mm）	Area（m^2）
		1600	2700	4.32
Sash	No.	W（mm）	H（mm）	Area（m^2）
	1	672	920	0.62
	-	-	-	-
The Maximum Size of Glass		W（mm）	H（mm）	Thick（mm）
		727	2540	12

1. Deflection test

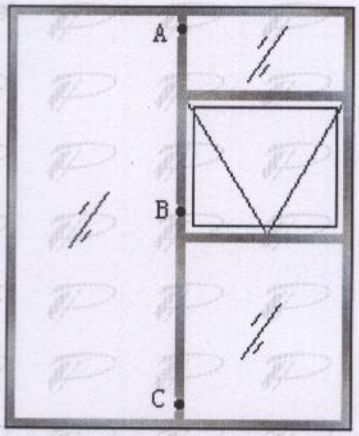
Reference:

AS 2047—1999 Windows in buildings-Selection and installation

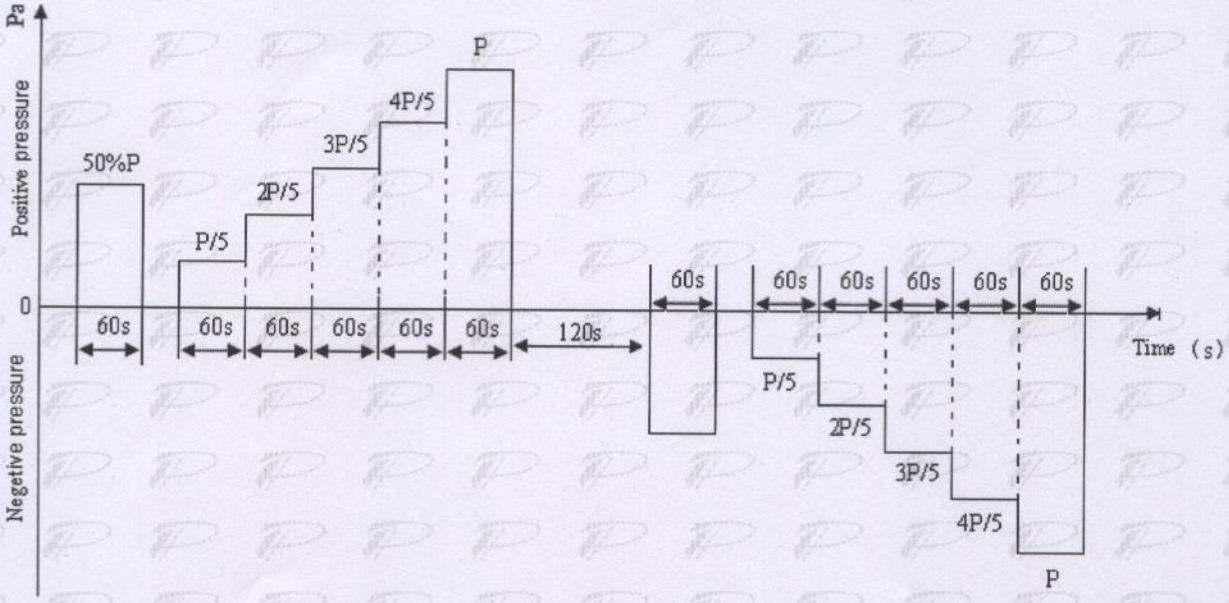
AS 4420.2—1996 Windows—Methods of test

Method 2: Deflection test

Test procedure: According to AS 4420.2-1996, the specimen should be installed into the testing chamber, and the displacement sensor should be installed in accordance with graph1. Making it preloaded first, and then smoothly increasing (or decreasing) the pressure,until the test pressure is reached.



Graph 1 the installation position of displacement sensor (inside view)



Graph 2 the increasing pressure sequence of deflection test

Results of Deflection Test:

Span (mm) :	2575
Allowable Deflection at 1/150 (mm) :	17.17
Allowable Deflection at 1/180 (mm) :	14.31
Allowable Deflection at 1/250 (mm) :	10.30

Test Pressure (Pa)	Displacement Point A	Displacement Point B (D_m)	Displacement Point C	Deflection $d = D_m - ((A+C)/2)$	Deflection Span Ratio	Assessment at 1/150	Assessment at 1/180	Assessment at 1/250
500	-	-	-	-	-	-	-	-
700	-	-	-	-	-	-	-	-
1,000	-	-	-	-	-	-	-	-
1,500	-	-	-	-	-	-	-	-
2,100	1.18	5.05	1.95	3.49	738.88	pass	pass	pass
3,000	-	-	-	-	-	-	-	-
5,000	-	-	-	-	-	-	-	-
-500	-	-	-	-	-	-	-	-
-700	-	-	-	-	-	-	-	-
-1,000	-	-	-	-	-	-	-	-
-1,500	-	-	-	-	-	-	-	-
-2,100	2.75	5.89	1.86	3.59	718.27	pass	pass	pass
-3,000	-	-	-	-	-	-	-	-
-5,000	-	-	-	-	-	-	-	-

2. Operating force test

Reference:

AS 2047—1999 Windows in buildings-Selection and installation

AS 4420.3—1996 Windows—Methods of test

Method 3: Operating force test

Test procedure: According to *AS 4420.3-1996,* the specimen should be installed into the test chamber. The window lock should be released without opening the window. A static force should be exerted without impact on the handle or control device in the opening direction and it is measured by dynamometer, which is initial operating force. Another force to keep the window moving is sustaining force.

type	Allowable value (N)	Results of Test						
		Sash	Area (m^2)	Opening force (N)		Closing force (N)		Results
				To intiate movement	To sustain movement	To intiate movement	To sustain movement	
Sliding doors	To intiate movement≤180 To sustain movement≤110	1	-	-	-	-	-	-
		2	-	-	-	-	-	-
Sliding Window (horizontal)	To intiate movement≤110 To sustain movement≤90	1	-	-	-	-	-	-
		2	-	-	-	-	-	-
Sliding Window (vertical)	To intiate movement≤200 To sustain movement≤160	1	-	-	-	-	-	-
		2	-	-	-	-	-	-

Results:

NIL

3. Air infiltration test

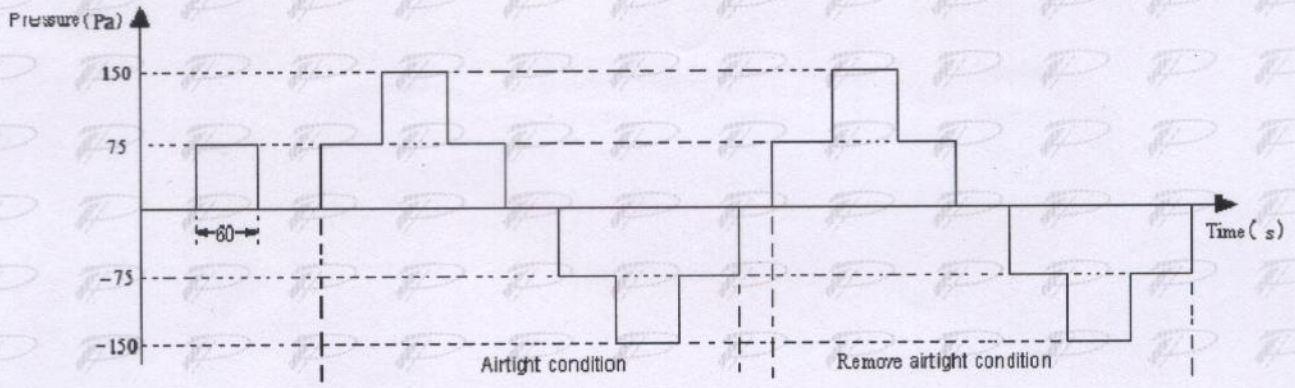
Reference:

AS 2047—1999 Windows in buildings-Selection and installation

AS 4420.4—1996 Windows—Methods of test

Method 4: Air infiltration test

Test procedure: According to AS 4420.4-1996, the specimen should be place into the test chamber, smoothly increasing (decreasing) the pressure in accordance with Graph 2. The air infiltration capacity at each differential pressure should be measured and carried out a regression calculation. The air infiltration capacities under pressure 75 Pa and 150 Pa are obtained, which are divided by the window area to get the air infiltration capacities per unit area under all differential pressure.



Graph 3

Air temperature(℃)	23	barometric pressure(kPa)		100.7
Building / Window type	Pressure direction	Maximum air infitration L/(m^2·s)	Test results L/(m^2·s)	
Airconditioned	+	75Pa: ≤1.0	0.5	Pass
	-		0.9	Pass
	+	150Pa: ≤1.6	0.7	Pass
	-		1.4	Pass
Nor -airconditioned	+	75Pa: ≤5.0	0.5	Pass
	+	150Pa: ≤8.0	0.7	Pass
Louvre window	+	75Pa: ≤20.0	-	-
Adjustable louvers, Residential and commercial buildings	+	75Pa: ≤20.0	-	-
	+	150Pa: ≤32.0	-	-

4. Water penetration resistance test

Reference:

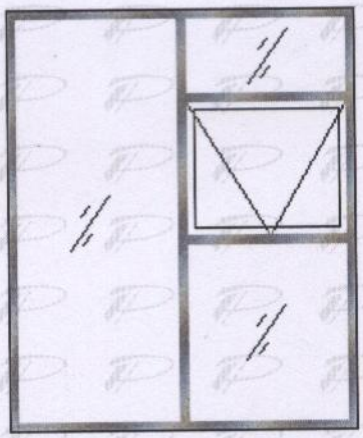
AS 2047—1999 Windows in buildings-Selection and installation

AS 4420.5—1996 Windows—Methods of test

Method 5: Water penetration resistance test

Test procedure: According to the test method record in the AS 4420.5-1996, the specimen should be place into the test chamber. Spray water on the chamber's surface, and the working water jet capacity is maintained at 0.05L/ m^2·s. Firstly, spraying water for 5 minutes under zero differential pressure condition, and then spray water for 15 minutes under test pressure of 300Pa,there should be no existence of leakage.

Pressure (Pa)	results
150	-
200	-
300	Pass
400	-
450	-



Graph of leakage location

5. Ultimate strength test

Reference:

AS 2047 —1999 Windows in buildings-Selection and installation

AS 4420.6 —1996 Windows —Methods of test

Method 6: Ultimate strength test

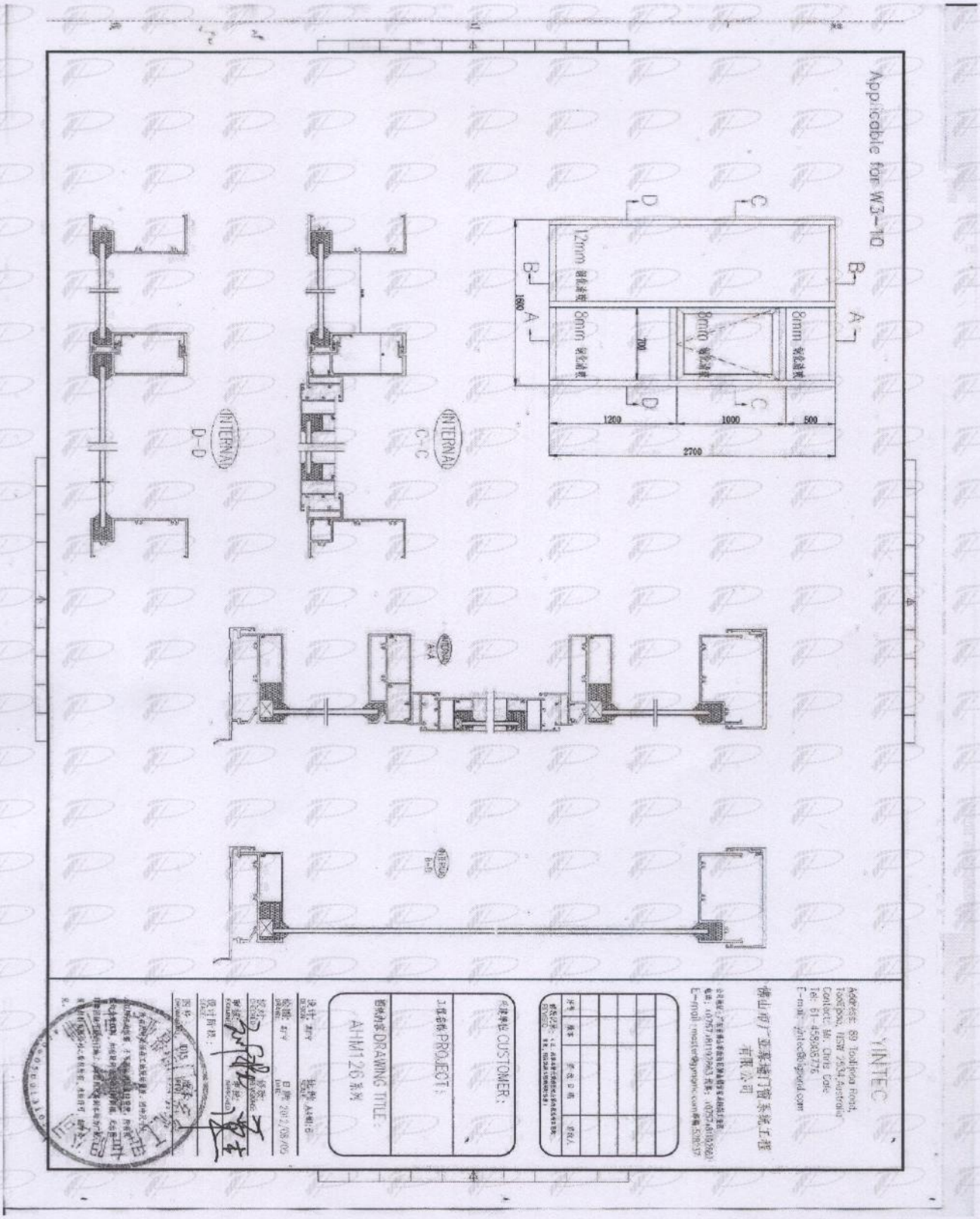
Test procedure: According to AS 4420.6-1996, the specimen should be place into the test chamber.

The test sample shall be subjected to a smoothly increasing differential Pressure . performed individually in both positive and negative directions. the time taken to reach the structural test pressure shall be approximately 1 minute. Test pressure shall be maintained on the test sample for a period of 10 s.

If the sponsor requires an incremental test, each incremental length of 10 seconds is need an independent test.

Test results							
Pressure (Pa)	700	1000	1500	2300	3300	5000	6000
Pressure	-	-	-	-	-	pass	-
Negative pressure	-	-	-	-	-	pass	-
result	**The test unit satisfied the requirement of AS 2047.**						

Appendix 1: Specimen Drawing



This laboratory confirms that the above diagram accurately represents the sample tested in this report.