



## TEST REPORT

EN 14351-1:2006 + A1:2010

### Windows and doors – Product standard, performance characteristics- Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics

Report Reference No.....: 141205002SHJ-BP-1-R1

Prepared by (name and signature) ...: Alvin Zhu *Alvin Zhu*

Approved by (name and signature) ...: Alex Gu *Alex Gu*

Date of issue.....: April 1, 2015

Contents .....: Total test report 14 pages including:  
Report text: 5 pages  
Appendix A for product drawings: 1 page  
Appendix B for information of representative sample : 1 page  
Appendix C for test data summary: 6 pages  
Appendix D for Copy of CE Mark: 1 page

**Testing Laboratory name** .....: Intertek Testing Services Ltd., Shanghai

Address.....: Plant 7, No 6958 Daye Road, Fengxian District, Shanghai

Testing location.....: Same as above

**Applicant's name** .....: YONGKANG HENGYANG IMPORT&EXPORT CO.,LTD

Address.....: 7FL, JINTONG BUILDING, THE HEADQUARTERS CENTER,  
YONGKANG, ZHEJIANG, CHINA

**Test specification:**

Standard .....: EN 14351-1: 2006+A1:2010 Clauses 4.2, 4.5, 4.6 and 4.14.

**Test item description**.....: EXTERNAL STEEL DOOR

Trade Mark .....: UNIVERN

Model and/or type reference.....: YF-S10

Manufacturer .....: YONGKANG HENGYANG IMPORT&EXPORT CO.,LTD.

Rating(s) .....: Not specified

#### Summary of testing:

The submitted samples were tested in accordance with specified standards, and listed the result accordingly, refer to text for detail.

#### Intertek Testing Services Ltd., Shanghai

Plant 7, No. 6958 Daye Road, Fengxian District, Shanghai, China  
Tel: 86-021-61136116 Fax: 86-021- 61189921  
Report Template Revision Date: January 1, 2015



<b>Test item particulars</b>
Classification of installation and use ..... : Not specified
Supply Connection ..... : Not applicable
<b>Possible test case verdicts</b>
- Test case does not apply to the test object ..... : N/A
- Test object does meet the requirement..... : P (Pass)
- Test object does not meet the requirement ..... : F (Fail)
<b>Testing</b>
Date of receipt of test item ..... : December 5, 2014
Date (s) of performance of tests ..... : December 17, 2014
The tests have been conducted under supervision of the representative of the Notified Body No. 1023, Milan Kovar
<b>General remarks:</b>
This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.
Throughout this report a comma (point) is used as the decimal separator.
When determining the test result, measurement uncertainty has been considered.

<b>General product information:</b>
Frame dimensions: 1050 mm wide x 2100 mm high x 50 mm thick.
The manufacturer declared the product family has other models which are smaller than the representative product but made in same materials and structure. The other models are 960 mm wide x 2050 mm high x 50 mm thick, 860 mm wide x 2050 mm high x 50 mm thick and 960 mm wide x 2100 mm high x 50 mm thick.
The sample ID number is S141205002SHJ-001
The drawing of the representative sample door can be referenced in Appendix A.
Information about the representative sample door can be referenced in Appendix B.

Performance test			
Clause	Requirement - Test	Result - Remark	Verdict
4.1	<p>General</p> <p>The performance characteristics for windows and external pedestrian doorsets shall be determined and expressed in accordance with 4.2 to 4.23.</p>		
4.2	<p>Resistance to wind load</p> <p>Tests on windows and external pedestrian doorsets shall be carried out in accordance with EN 12211. Classification according to EN 12210.</p>	<p>Test pressures for Class 1: P1: 400 Pa, P2: 200 Pa, P3:600 Pa</p> <p>Relative frontal deflection: Class C</p> <p>After repeated pressure test and safety test, no significant damage happened, and the sample door was still operable. The test specimen remained closed</p> <p>The air permeability after tests P1 and P2 <u>did not exceed</u> the upper limits of the claimed air permeability class (Class 3) as specified in EN 12207 by more than 20%.</p> <p>The test specimen meets the requirement of clause 6.1 of EN 12210</p> <p>Conclusion: Final classification C1</p> <p>The data of resistance to wind load can be referenced to Appendix C.</p>	P
4.3	Resistance to snow and permanent load.	Not claimed	N/A
4.4	Fire characteristics	Not claimed	N/A
4.5	<p>Watertightness</p> <p>A watertightness test shall be carried out in accordance with EN 1027, Method 1A. Classification according to EN 12208.</p>	<p>Non-shielded (A): Class 1A</p> <p>Water penetration: When water sprayed for 1 minute at 50 Pa, water penetration started at the middle bottom joint between the door leaf and door frame.</p> <p>The door drawing of watertightness can be referenced to Appendix C.</p>	P

Performance test			
Clause	Requirement - Test	Result - Remark	Verdict
4.6	<p>Dangerous substance</p> <p>In so far as the state of the art permits, the manufacturer shall establish those materials in the product which are liable to emission or migration during normal intended use and for which emission or migration into the environment is potentially dangerous to hygiene, health or the environment.</p>	<p>Manufacturer declared the products can meet requirements of Title VIII and Annex XVII of the Regulation (EC) No. 1907/2006 of the European Parliament and the Council as amended.</p> <p>The customer declared the products do not contain any materials proven as harmful-to-health.</p>	P
4.7	<p>Impact resistance</p> <p>Windows and external pedestrian doorsets fitted with glass or other fragmental material shall be tested and the results shall be expressed in accordance with EN 13049. Where relevant, the test shall be carried out from both sides</p>	Not claimed	N/A
4.8	<p>Load bearing capacity of safety devices</p> <p>Safety devices (e.g. retaining and reversing catches, restrictors, and fixing devices for cleaning procedures), if provided and engaged in accordance with the manufacturer's published instructions, shall be able to hold the leaf, casement or sash in place for 60 s when 350 N are applied to the leaf, casement or sash in the most unfavourable way (i.e. position, direction). This threshold strength shall be demonstrated by means of tests carried out as described in EN 14609 or EN 948 (reference methods), or by calculation.</p>	Not claimed	N/A
4.9	Height and width of doorsets and French windows	Not claimed	N/A
4.10	Ability to release	Not claimed	N/A
4.11	Acoustic performance	Not claimed	N/A

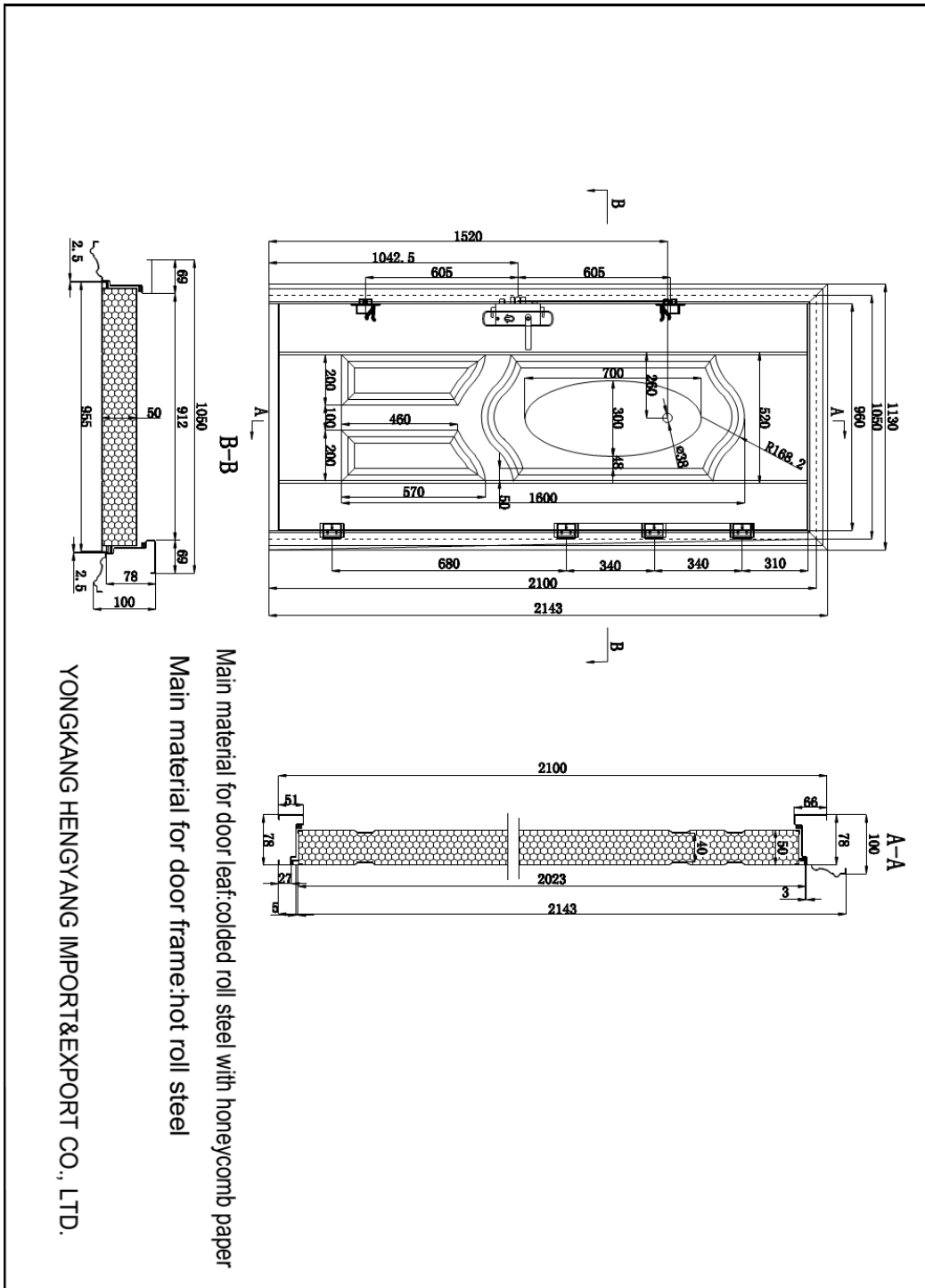


Performance test			
Clause	Requirement - Test	Result - Remark	Verdict
4.12	Thermal transmittance  The test shall be carried out in accordance with EN ISO 12567-2:2010. The thermal transmittance test, U, of the specimen is measured by means of guarded hot-box method in accordance with ISO 8990:1994. Steady-state measurement duration of the specimen is 12 hours.	Not claimed	N/A
4.13	Radiation properties	Not claimed	N/A
4.14	Air permeability – before and after wind load  Two air permeability tests shall be carried out in accordance with EN 1026, one with positive test pressures and one with negative test pressures. Classification according to EN 12207.	Length of opening joint: 5.956 m Overall area: 2.205 m <sup>2</sup> Final classification of air permeability (before wind load): Class 3 The data of air permeability can be referenced in Table 2 to Table 5 and Chart 1 in Appendix C.	P
4.15	Durability	Not claimed	N/A
4.16	Operating force	Not claimed	N/A
4.17	Mechanical strength	Not claimed	N/A
4.18	Ventilation	Not claimed	N/A
4.19	Bullet resistance	Not claimed	N/A
4.20	Explosion resistance	Not claimed	N/A
4.21	Resistance to repeated opening and closing	Not claimed	N/A
4.22	Behavior between different climates	Not claimed	N/A
4.23	Burglar resistance	Not claimed	N/A
4.24	Special requirement	Not claimed	N/A

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Appendix A

Product Drawings



**Appendix B**

**Table 1 Information of Representative Sample Door**

2 Manufacturer: <a href="#">ZHEJIANG UNIVERN INDUSTRY CO., LTD.</a>		
3 Window (door) system name / construction type (window, door, casement door): <a href="#">External Steel Door (YF-S10)</a>		
4 Specification of components and their manufacturing plans; fill in material and the manufacturer's marking		
- main profiles <b>manufacturer, supplier:</b> <a href="#">ZHEJIANG UNIVERN INDUSTRY CO., LTD.</a>	<b>marking:</b> frame, sample (frame) dimensions <b>B x H:</b> 1050x2100 mm	<b>marking:</b> casement (leaf), casement (s) dimensions <b>b x h:</b> 955x2023mm <b>Door leaf:</b> Honeycomb paper filling YF-P15 with cold roll steel <b>Door frame material:</b> hot roll steel
-thermal break N/A	<b>Manufacturer, supplier, marking,</b> thickness (mm) N/A	<b>Manufacturer, supplier, marking,</b> thickness (mm) N/A
- other profiles <b>manufacturer, supplier:</b> <a href="#">Wuhan Iron and Steel Company Limited</a>	<b>marking:</b> false mullion + cover, mullions and transoms, glazing bars, threshold profiles, casement weather mouldings (casement water bars) <b>Threshold:</b> stainless steel #201	
- opening joint sealing (preformed gaskets, weather stripping) <b>manufacturer, supplier:</b> <a href="#">ZHEJIANG UNIVERN INDUSTRY CO., LTD.</a>	<b>marking:</b> interior (internal) preformed gasket, design in the corners*  <a href="#">Rubble seal, UN-N01</a>	<b>marking:</b> central preformed gasket, design in the corners*  N/A
- sealing of glazing <b>manufacturer, supplier:</b> N/A	<b>marking:</b> exterior (external) preformed gasket, design in the corners*  N/A	<b>marking:</b> threshold preformed gasket (wiping on the leaf)  -
- sealing of glazing <b>manufacturer, supplier:</b> N/A	<b>marking:</b> external glazing, design in the corners*  N/A	<b>marking:</b> glazing bead and preformed gasket *  N/A
Insulating glass, infill <b>manufacturer, supplier:</b> N/A	<b>marking</b> and composition of the glazing and infills N/A	
5 Draining and decompression of casement /glazing groove (rebate)/: (e.g. at the bottom of 3 openings (5x30 mm) input profile, 2 openings (5x28 mm) with cover output profile; top external preformed gasket is 2x interrupted in the same length of 50 mm). N/A		
6 Draining and decompression of frame (opening joint): N/A		
7 Building hardware (fittings) ( type marking and manufacturer): <a href="#">Lockset YF-S ZHEJIANG UNIVERN INDUSTRY CO., LTD.</a>		
Exit devices (bolts) (right, left casement, others): number of perimeter points, operating way, auxiliary thrusts, special pointsN/A		
Hinges (right, left casement, other): sort (turn, tilt and turn) <a href="#">YF-01 ZHEJIANG UNIVERN INDUSTRY CO., LTD.</a>		
8 Frame joints design and additional notes: N/A		
9 Notice: *design of preformed gaskets in the corners: continuously bent, slit (notched), cut and glued		

**Appendix C Test Data Summary**

**1. Windows and doors – Air permeability – Test method EN 1026 – before wind load**

- Length of opening joints: 5.956 m
- Overall area: 2.205 m<sup>2</sup>

Table 2

Air permeability at positive pressure	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability absolute (m <sup>3</sup> /h)		0.10	0.21	0.42	0.42	0.52	0.73	13.71
related to joints length (m <sup>3</sup> /hm)		0.02	0.04	0.07	0.07	0.09	0.12	2.30	3.07
related to overall area (m <sup>3</sup> /hm <sup>2</sup> )		0.05	0.09	0.19	0.19	0.24	0.33	6.22	8.29

Table 3

Air permeability at negative pressure	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability absolute (m <sup>3</sup> /h)		0.31	0.42	0.52	0.52	0.62	6.75	17.86
related to joints length (m <sup>3</sup> /hm)		0.05	0.07	0.09	0.09	0.10	1.13	3.00	3.33
related to overall area (m <sup>3</sup> /hm <sup>2</sup> )		0.14	0.19	0.24	0.24	0.28	3.06	8.10	8.99

Table 4

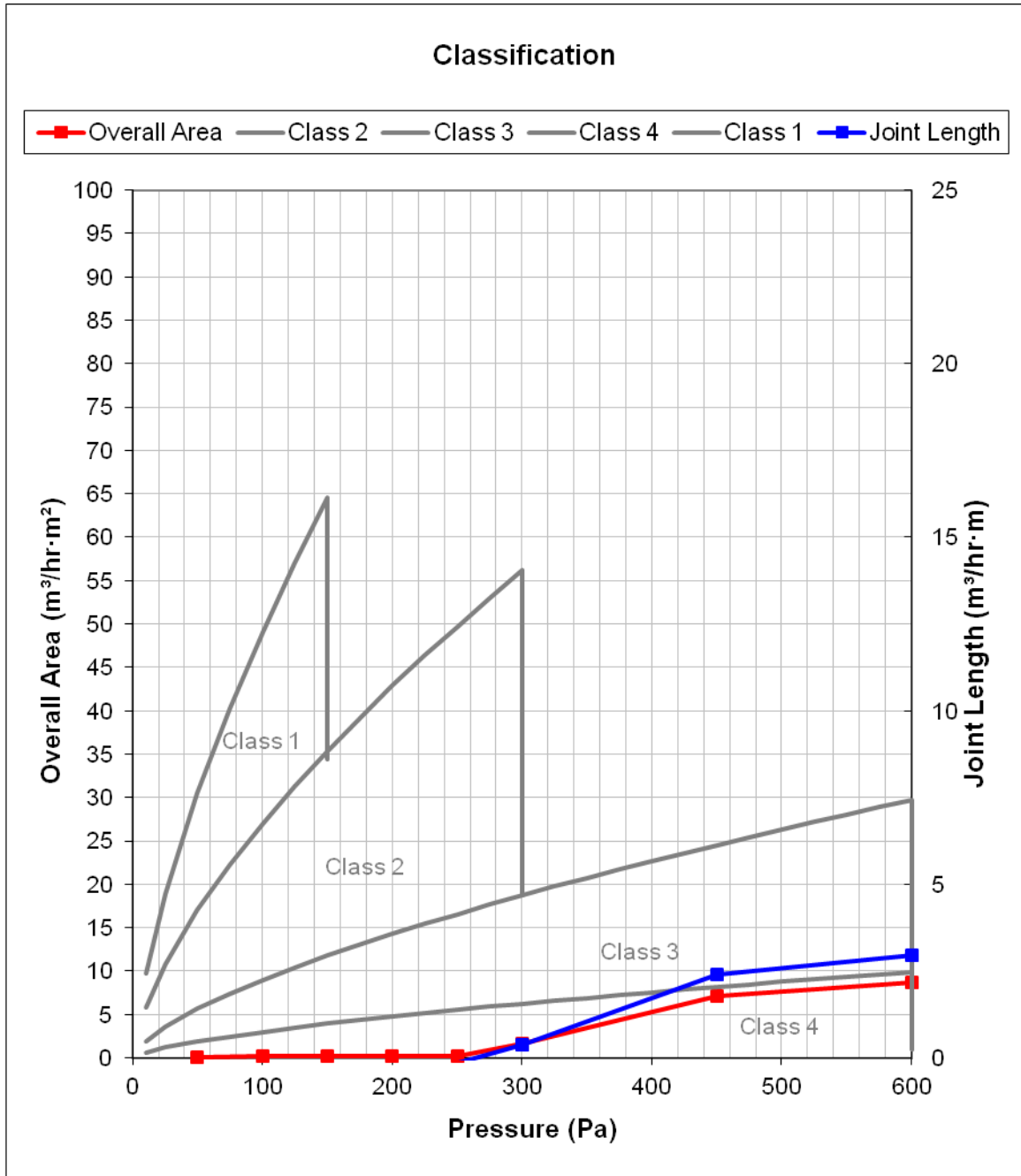
Average air permeability	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability absolute (m <sup>3</sup> /h)		0.21	0.31	0.47	0.47	0.57	3.74	15.78
related to joints length (m <sup>3</sup> /hm)		0.03	0.05	0.08	0.08	0.10	0.63	2.65	3.20
related to overall area (m <sup>3</sup> /hm <sup>2</sup> )		0.09	0.14	0.21	0.21	0.26	1.70	7.16	8.64

Table 5

Reference air permeability at 100 Pa related to joints length	Q <sub>100</sub> = 0.05 m <sup>3</sup> /hm
Reference air permeability at 100 Pa related to overall area	Q <sub>100</sub> = 0.14 m <sup>3</sup> /hm <sup>2</sup>
Classification related to joints length ( <i>with regard to pressure dependence of air permeability</i> ) according to EN 12207	Class: 3
Classification related to overall area ( <i>with regard to pressure dependence of air permeability</i> ) according to EN 12207	Class: 3
<b>Final classification of the test specimen according to EN 12207</b>	<b>Class: 3</b>

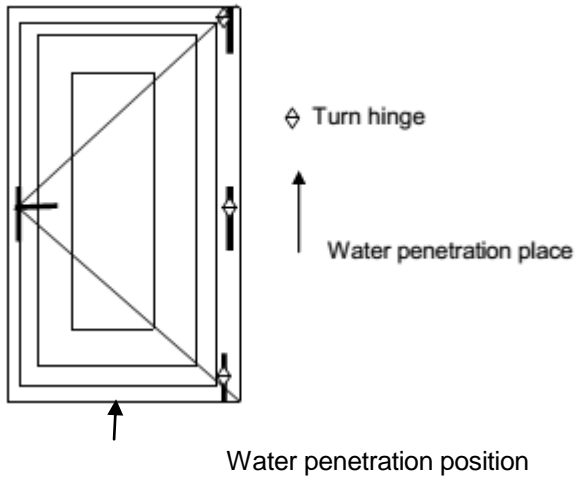


Chart 1 - Air Permeability before Wind load



2. Windows and doors – Watertightness – Test method EN 1027

Door Drawings



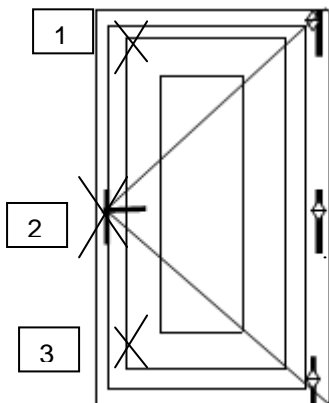
Water penetration: When water sprayed for 1 minute at 50 Pa, water penetration started at the middle bottom joint between the door leaf and door frame.

**Test result:**

$P_{max} = 0 \text{ Pa}$

3. Windows and doors –Resistance to wind load – Test method EN 12211

4.1. Deflection test



Span length  $L = 2003 \text{ mm}$

Table 6: Deflection test P1 = 400 Pa (Class 1)

Gauge No.	Frontal displacement (deflection) values (mm)							
	Positive pressure +P1	Zero pressure Po	Frontal deflection F <sub>p</sub> (mm)	Relative frontal deflection F <sub>rp</sub> = F <sub>p</sub> /L	Negative pressure -P1	Zero pressure Po	Frontal deflection F <sub>p</sub> (mm)	Relative frontal deflection F <sub>rp</sub> = F <sub>p</sub> /L
1 top	0.4	0.0	0.1	1/20030	0.3	0.0	0.05	1/40060
2 middle	0.4	0.0			0.3	0.0		
3 bottom	0.2	0.0			0.2	0.0		

**4.2. Repeated pressure test**

50 cycles of negative and positive pressure P2 = 0.5 × P1= 200 Pa

**Test Result:**

No significant damage happened, and the sample was still operable.

**4.3. Windows and doors – Air permeability – Test method EN 1026 – after wind load**

- Length of opening joints: 5.956 m
- Overall area: 2.205 m<sup>2</sup>

Table 7

Air permeability at positive pressure	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability absolute (m <sup>3</sup> /h)		0.21	0.42	0.52	0.62	0.62	8.51	16.82
related to joints length (m <sup>3</sup> /hm)		0.03	0.07	0.09	0.10	0.10	1.43	2.82	5.44
related to overall area (m <sup>3</sup> /hm <sup>2</sup> )		0.09	0.19	0.19	0.28	0.28	3.86	7.63	14.69

Table 8

Air permeability at negative pressure	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability absolute (m <sup>3</sup> /h)		0.21	0.21	0.42	0.52	0.62	11.01	14.75
related to joints length (m <sup>3</sup> /hm)		0.03	0.03	0.07	0.09	0.10	1.85	2.48	1.59
related to overall area (m <sup>3</sup> /hm <sup>2</sup> )		0.09	0.09	0.19	0.24	0.28	4.99	6.69	4.29

Table 9

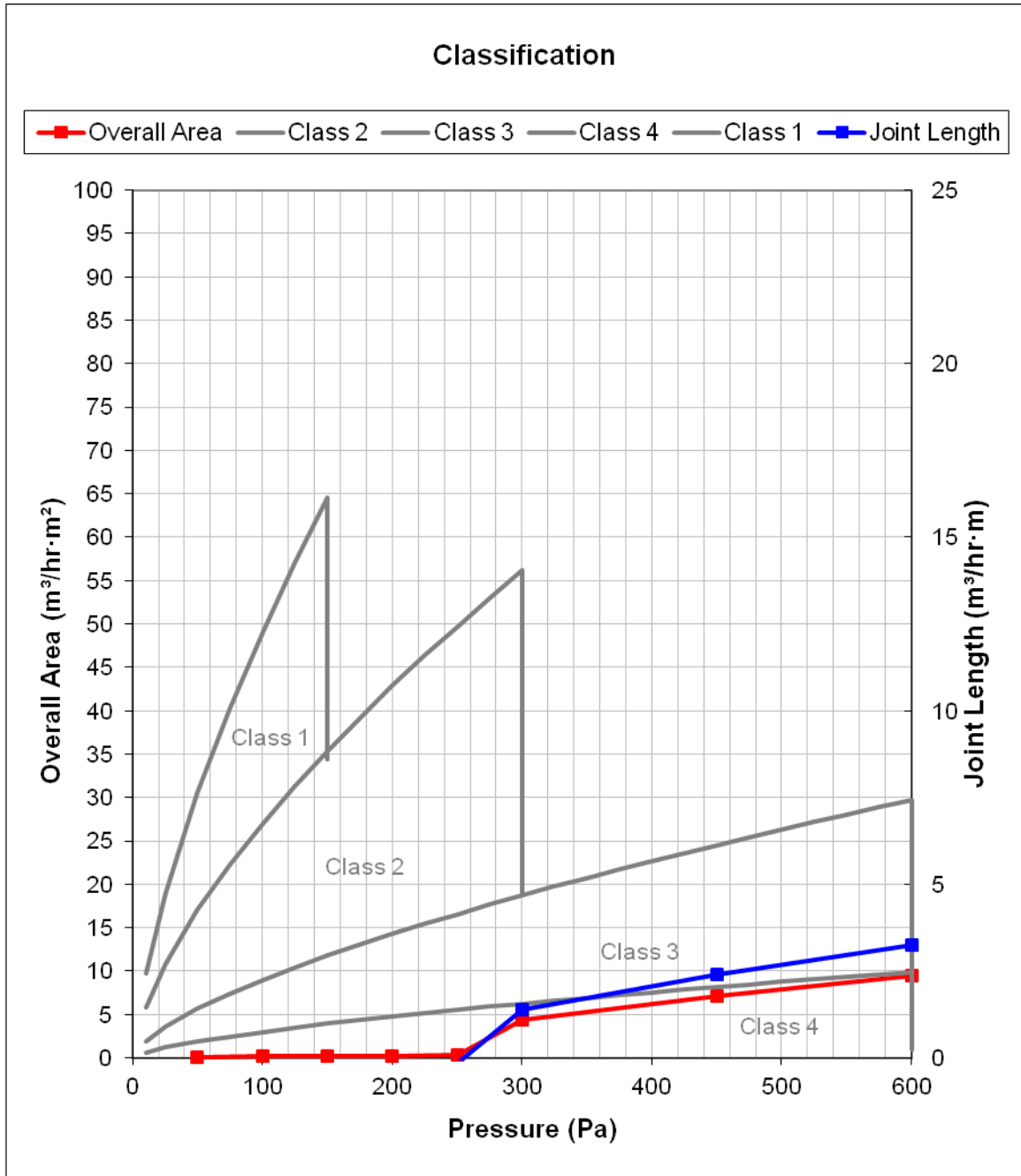
Average air permeability	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability absolute (m <sup>3</sup> /h)		0.21	0.31	0.47	0.57	0.62	9.76	15.78
related to joints length (m <sup>3</sup> /hm)		0.03	0.05	0.08	0.10	0.10	1.64	2.65	3.51
related to overall area (m <sup>3</sup> /hm <sup>2</sup> )		0.09	0.14	0.21	0.26	0.28	4.43	7.16	9.49



Table 10

Reference air permeability at 100 Pa related to joints length	Q100 = 0.05 m <sup>3</sup> /hm
Reference air permeability at 100 Pa related to overall area	Q100 = 0.14 m <sup>3</sup> /hm <sup>2</sup>
The requirement for maximum air permeability (120% of upper limit value) at 100 Pa for the <b>given class – Class 3</b> (after wind load) related to joints length	2.70 m <sup>3</sup> /hm
The requirement for maximum air permeability (120% of upper limit value) at 100 Pa for the <b>given class – Class 3</b> (after wind load) related to overall area	10.8 m <sup>3</sup> /hm <sup>2</sup>

**Chart 2 - Air Permeability after Wind load**



**4.4. Safety test**

1 cycle including negative and positive test pressure  $P_3 = 1.5 \times P_1 = 600 \text{ Pa}$


**Test results:**

The test specimen remained closed, without any visible damage and failure or detachment any parts of the test specimen. The operation of the moving parts was done without any difficulties.

**Appendix D**

**Copy of CE Mark**

Copy of marking plate


<b>Yongkang Hengyang Import&amp;Export CO.,LTD 7FL, Jintong Building, The Headquarters Center, Yongkang, Zhejiang,China</b>
<b>EN 14351-1:2006 + A1:2010</b>
External Steel Door
Model: YF-S10
<b><u>Characteristics</u></b>
Resistance to wind load – Test pressure: Class 1
Resistance to wind load – Frame deflection: Class C
Watertightness: Non-shielded (A) :Class 1A
Height and width:2100mm, 1050mm
Dangerous substance: Compliance declared by manufacturer
Air permeability: Class 3

Note:

1. If the CE marking is reduced or enlarged the proportions given in the above graduated drawing must be respected.
2. The various components of the CE marking must have substantially the same vertical dimension, which may not be less than 5 mm.
3. CE marking and label shall be affixed visibly, legibly and indelibly.

\*\*\*\*\*End of Report\*\*\*\*\*