

SHANDONG SAINTY ALUMINIUM LIMITED

TEST REPORT

SCOPE OF WORK

Stockport Window

REPORT NUMBER

200529005SHF-001

TEST DATE(S)

2020-6-8 - 2020-6-8

ISSUE DATE

2020-06-18

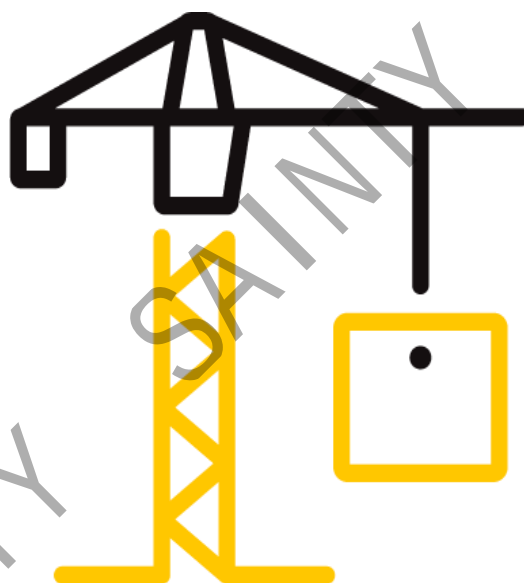
PAGES

20

DOCUMENT CONTROL NUMBER

LFT-APAC-SHF-OP-10n(May 1, 2020)

© 2020 INTERTEK



Test Verification of Conformity

On the basis of the referenced test report(s), sample(s) of the below product have been found to comply with the harmonized standards and Directives listed on this verification at the time the tests were carried out. Other standards and Directives may be relevant to the product.

Once all product relevant  mark directives are verified in compliance, the manufacturer may indicate compliance by signing a Declaration of Performance(DoP) themselves and applying the mark to product identical to the test sample(s) if the product complies with all relevant CE mark Directives requirements.

Applicant Name & Address:

SHANDONG SAINTY ALUMINIUM LIMITED
No.322 Yubei Road,Dongcheng Industry Park, Linqu Country, Weifang
City, Shandong Province, China.

Product Description:

Casement Window

Ratings & Principle

Not specified

Characteristics:

Stable, pressure resistant, waterproof

Models:

SG01

Brand Name:

Sainty

Relevant Standards/

EN 14351:2006+A2:2016 Clauses 4.2, 4.5 and 4.14

Specifications/Directives:

Length of opening joints: 5.52m Overall area: 4.81m²

Verification Issuing Office:

Intertek Testing Services
Plant 5, No. 6958 Daye Road, Fengxian District, Shanghai, China

Date of Tests:

2020-6-8--2020-6-8

Test Report Number(s):

200529005SHF-001

This verification is part of the full test report(s) and should be read in conjunction with them.

Signature:

Zac Zhang

Name:

Zac Zhang

Position:

Reviewer

Date:

2020-6-8



This Verification 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 Verification. Only the Client is authorized to permit copying or distribution of this Verification. 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/inspection results referenced in this Verification are relevant only to the sample tested/inspected. This Verification by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Test Report

Statement

- 1.This report is invalid without company's special seal for testing on assigned page.
- 2.This report is invalid without authorized person's signature.
- 3.This report is invalid where any unauthorized modification indicated.
- 4.Don't copy this report in partial (except full copy) without any official approval in written by our company. This report is invalid without re-stamping the special seal for testing in copying report.
- 5.Any holder of this document is advised that this report is for the exclusive use of Intertek's Customer and is provided pursuant to the agreement between Intertek and its Customer. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. This report was made with due care within the limitation of a defined scope of work and on the basis of information, materials and instructions received from the Customer or its nominated third parties. Intertek is under no obligation to refer to or report upon any facts or circumstances which are outside the specific instructions received and accepts no responsibility to any parties whatsoever, following the issue of the report, for any matters arising outside the agreed scope of the works. The tests results are not intended to be a recommendation for any particular course of action. Customer is responsible for acting as it sees fit on the basis of such results.
- 6.Intertek's written consent is required to use Intertek's name or logo on the object, product or service being tested. The observations and test results in this report relate only to the sample under test. This report alone does not indicate that the item, product or service has passed any Intertek certification program.
- 7.The report was digital signed by Shang Hai, Intertek Group plc, please using Adobe Acrobat Reader to verify the authenticity.

Test Report

Issue Date: 2020-06-18 Intertek Report No. 200529005SHF-001

Applicant: SHANDONG SAINTY ALUMINIUM LIMITED

Applicant Address: No. 322 Yubei Road, Dongcheng Industry Park, Linqu County, Weifang city, Shandong Province, China

Attn: Frank

Sample information

Product: Stockport Window

Trade Mark: /

Model and/or type reference: SG01

Manufacturer: SHANDONG SAINTY ALUMINIUM LIMITED

Sample ID: S200529005SHF.001

Date of receipt of test item: 2020-05-28

Date (s) of performance of tests: 2020-06-08 ~ 2020-06-08

Testing information

Standard: EN 14351:2006+A2:2016 Clauses 4.2, 4.5 and 4.14

Rating(s): Not specified

Possible Test Case Verdicts

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)

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

Report Authorized

Name: Zac Zhang

Title: Reviewer



Name: Gio Liu

Title: Project Engineer

Test Report

Issue Date: 2020-06-18

Intertek Report No. 200529005SHF-001

Test Items, Method and Results:

EN 14351-1:2006 + A2:2016			
Clause	Requirement	Result - Remark	Verdict
4.2	Resistance to wind load Tests on windows and external pedestrian doorsets shall be carried out in accordance with EN 12211. Classification according to EN 12210.	Test pressures for: Class 3 P1: 1200 Pa P2: 600 Pa P3: 1800 Pa Relative frontal deflection: Class B3 After repeated pressure test and safety test, no significant damage happened, and the sample window was still operable. The test specimen remained closed. The air permeability after tests P1 and P2 did not exceed the upper limits of the claimed air permeability class (Class 3) as specified in EN 12207 by more than 20%. The test specimen meets the requirement of clause 6.1 of EN 12210 Conclusion: Final classification B3 The data of resistance to wind load can be referenced to Appendix C.	Pass
4.5	Watertightness A watertightness test shall be carried out in accordance with EN 1027, Method 1A. Classification according to EN 12208.	Non-shielded (A): Class 3A Water penetration: When water sprayed for 300 seconds at 100 Pa, there was no water penetration. The window drawing of watertightness can be referenced to Appendix C.	Pass
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: 5.52m Overall area: 4.81 m² Final classification of air permeability (After wind load): Class 3 The data of air permeability can be referenced in Appendix C.	Pass

Test Report

Issue Date: 2020-06-18

Intertek Report No. 200529005SHF-001

Appendix A: Product Drawings

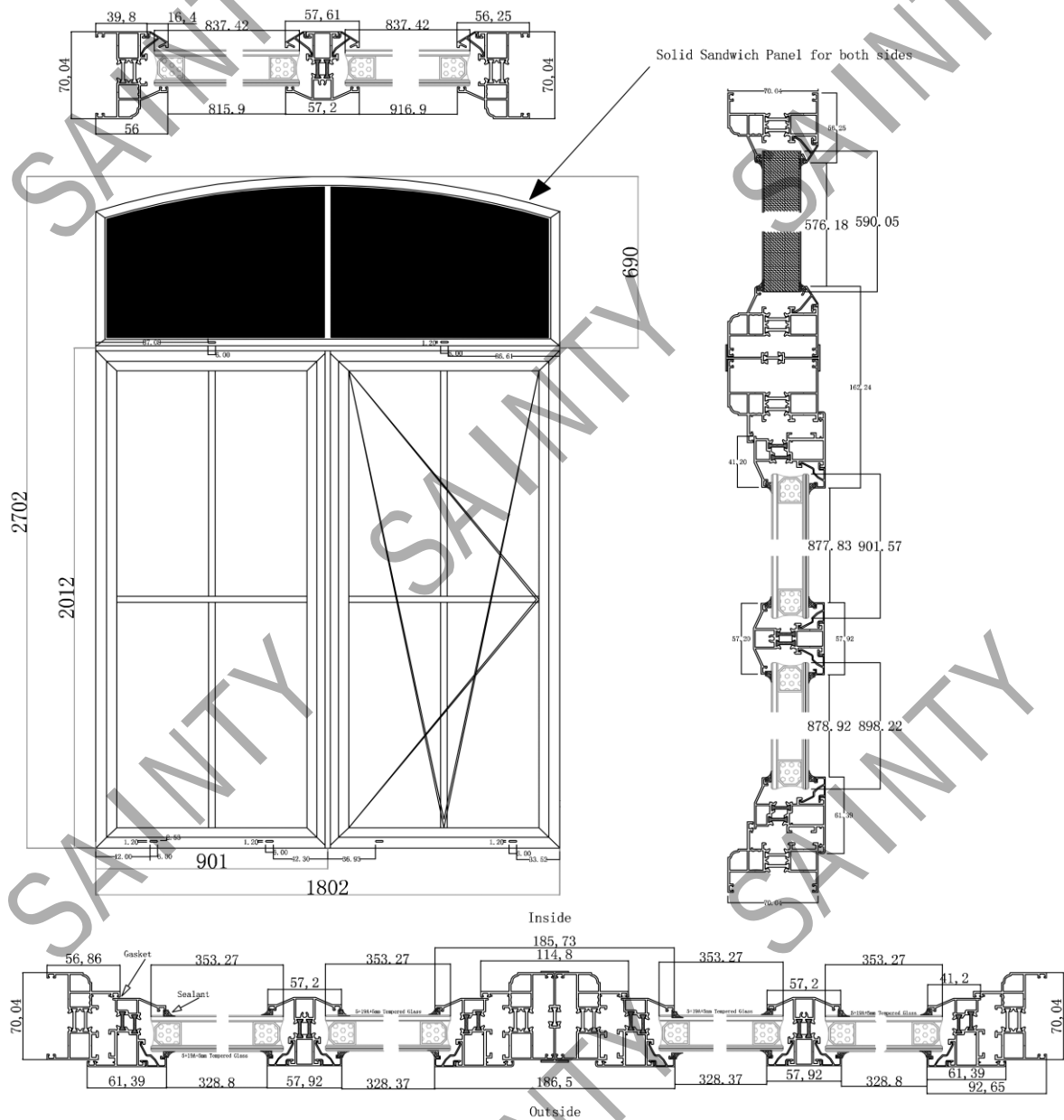


Fig.1 Drawing of Representative Sample

Test Report

Issue Date: 2020-06-18 Intertek Report No. 200529005SHF-001

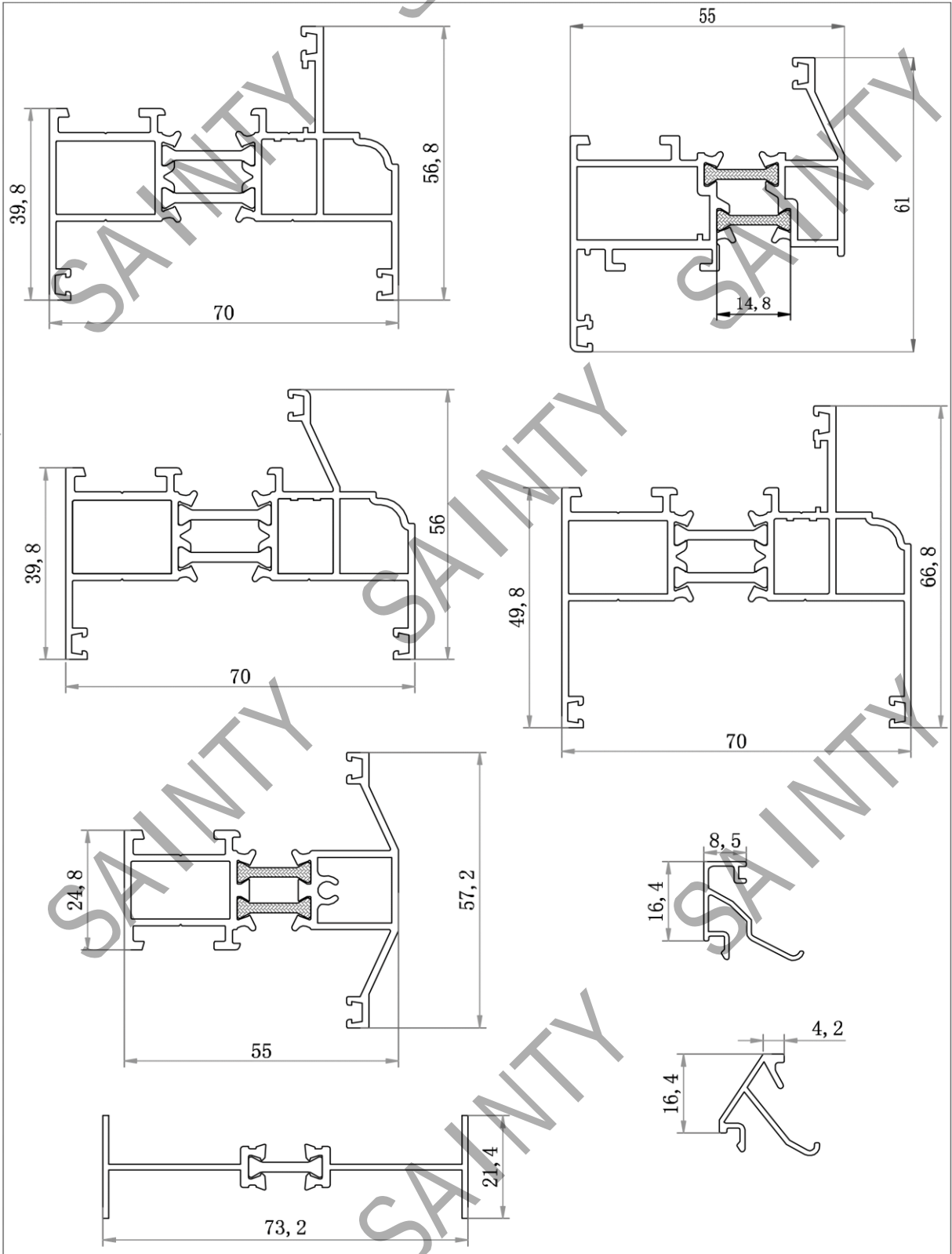


Fig.2 Drawing of Representative Sample

Test Report

Issue Date: 2020-06-18

Intertek Report No. 200529005SHF-001

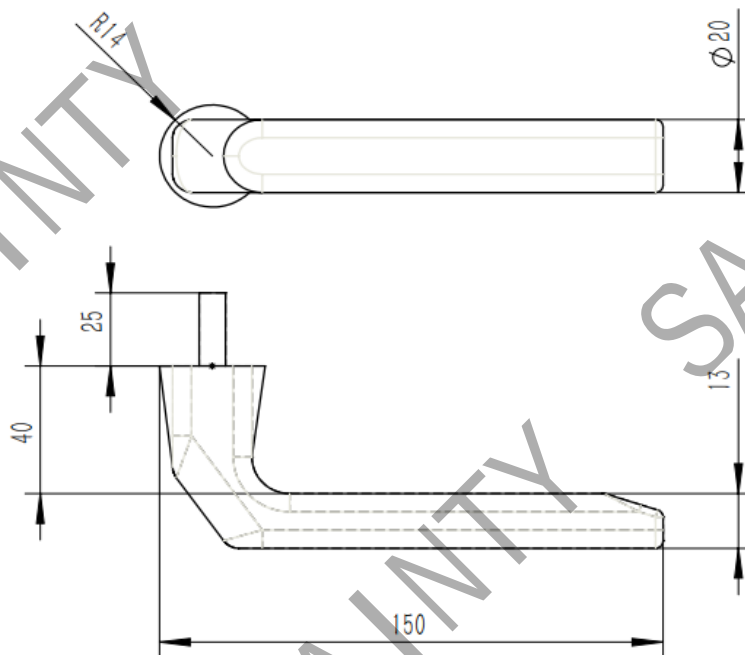
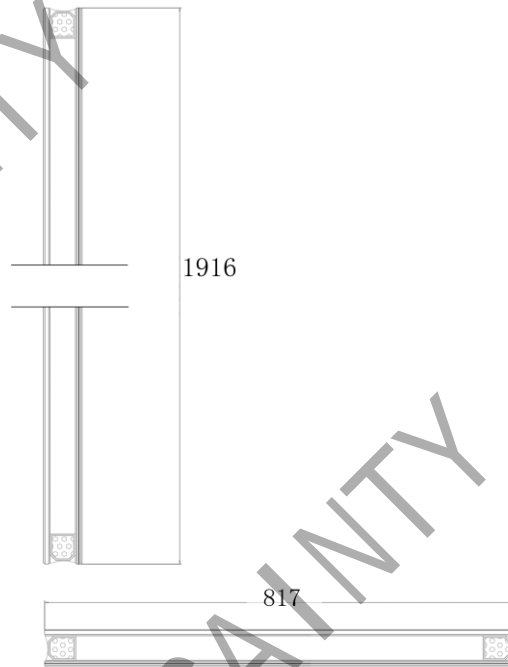


Fig.3 Drawing of Representative Sample

Test Report

Issue Date: 2020-06-18 Intertek Report No. 200529005SHF-001

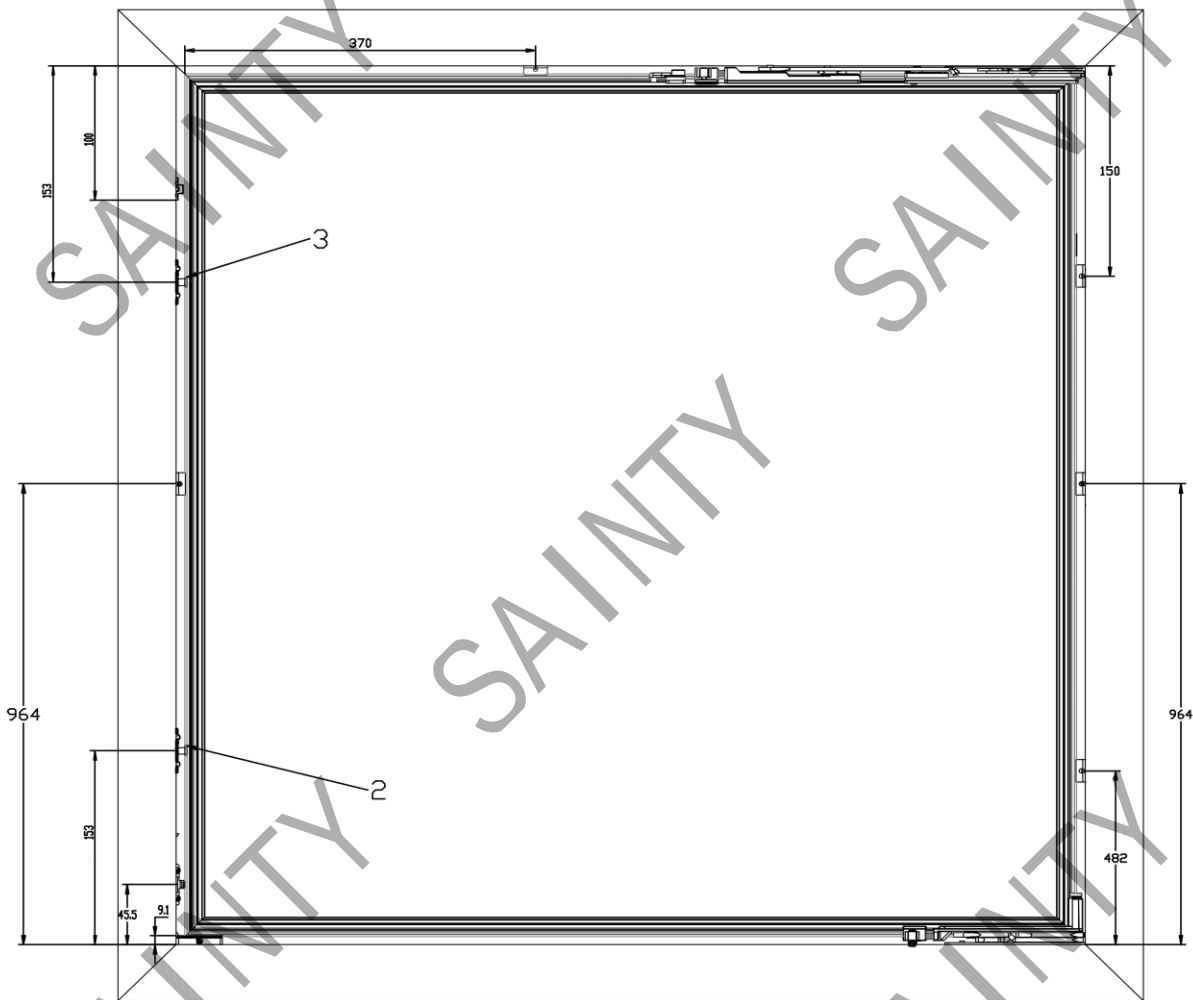


Fig.4 Drawing of Representative Sample

Test Report

2020-06-18

Intertek Report No. 200529005SHF-001

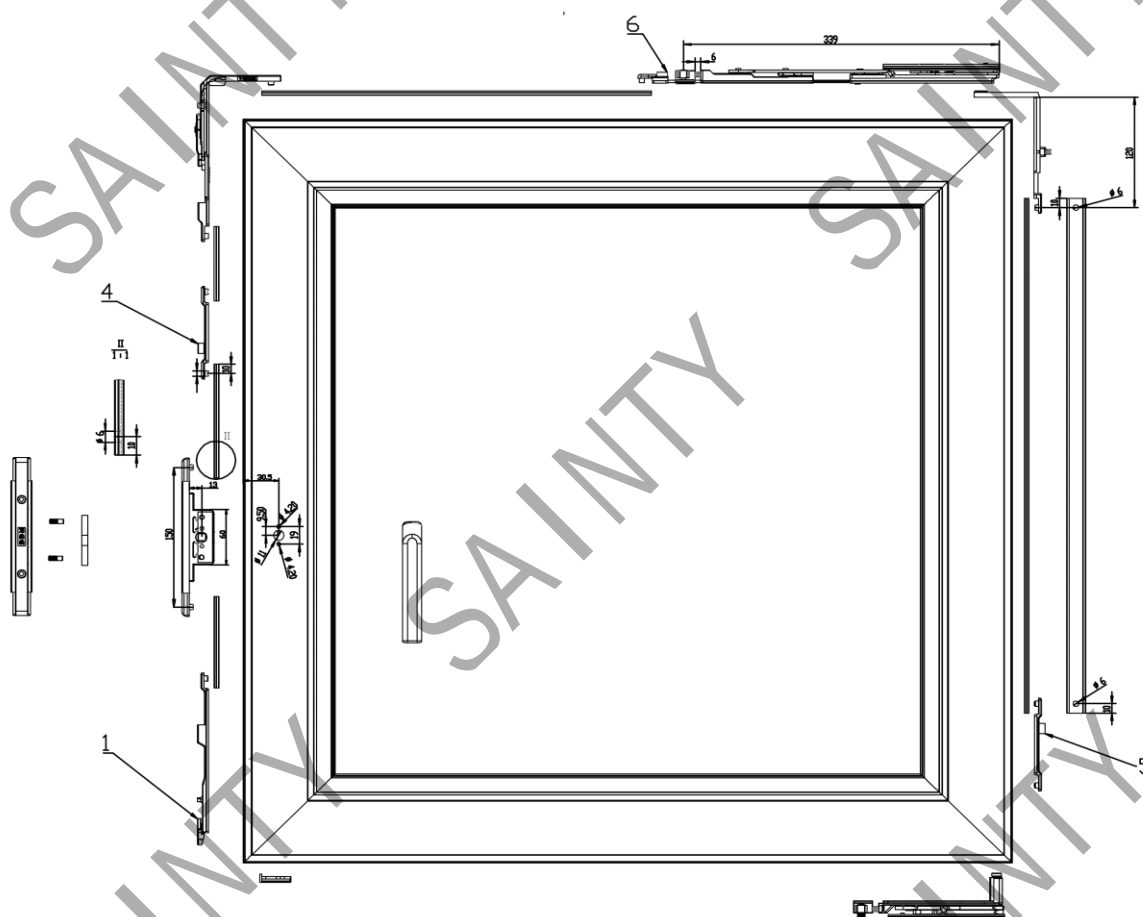


Fig.5 Drawing of Representative Sample

Test Report

Issue Date: 2020-06-18

Intertek Report No. 200529005SHF-001

Appendix B: Information about Representative Sample supplied by manufacturer

Table 1 Product Information

1	Product Name	Stockport Window
2	Model	SG01
3	Dimension of Window Frame	1802mm (Width) x2702mm (Height) x70mm (Thickness)
4	Dimension of Window Sash	Fixed Part: 901mm (Width) x2012mm (Height) x55mm (Thickness) Tilt and Turn Part: 901mm (Width) x2012mm (Height) x55mm (Thickness)
5	Profile	Model: Aluminium SP011 Manufacturer: SHANDONG SAINTY ALUMINIUM LIMITED
6	Frame Corner Construction Details: Joinery Type	Mitre-cut, assembly with corners keys
7	Reinforcement	None
8	Glazing	Dimension: 817mm (Width) x1916mm (Height) Structure: 29 mm thick, 5mm +19mm Air +5mm Double Tempered Glass Supplier: SHANDONG SAINTY ALUMINIUM LIMITED
9	Hardware	Standard Tilt and Turn hardware Model: JL29KL Supplier: Germany REG Hardware Lock point Model: RL36 Supplier: Germany REG Hardware
10	Weather-strip	Model: 55is Supplier: SHANDONG HAIDEJING POLYMER MATERIAL CO., LTD.
11	Thermal Break	Model: BT02 Material: PA66GF25 Nylon insulation strip Supplier: SHANDONG BAOTAI INSULATION MATERIALS CO.,LTD
12	Drainage	Sizes: 30mm x 6mm (Width x Height) Quantity: 6
13	Gasket (between leaf and frame)	Model: MG08 Material: EPDM Supplier: Suzhou Msking Aluminium CO.,LTD
14	Sealant of Glass	Model: SX86 Material: Silicone sealant Supplier: Shenzhen Xinhe Adhesive Technology Co., Ltd.
15	Installation	Brick Wall Structure

Test Report

Issue Date: 2019-11-12

Intertek Report No. 190930005SHF-001

Appendix C: Test Data Summary

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

- Length of opening joints: 5.52 m
- Overall area: 4.81 m²

Table 1

Air permeability at positive pressure	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability								
	absolute (m ³ /h)	10.83	17.23	23.53	29.54	35.25	39.97	54.94	74.43
	related to joints length (m ³ /hm)	1.96	3.12	4.26	5.35	6.39	7.24	9.95	13.48
	related to overall area (m ³ /hm ²)	2.25	3.58	4.89	6.14	7.33	8.31	11.42	15.47

Table 2

Air permeability at negative pressure	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability								
	absolute (m ³ /h)	8.47	11.91	14.87	17.13	19.40	21.46	25.80	30.13
	related to joints length (m ³ /hm)	1.53	2.16	2.69	3.10	3.51	3.89	4.67	5.46
	related to overall area (m ³ /hm ²)	1.76	2.48	3.09	3.56	4.03	4.46	5.36	6.26

Test Report

Issue Date: 2019-11-12

Intertek Report No. 190930005SHF-001

Table 3

Average air permeability	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability								
	absolute (m ³ /h)	9.65	14.57	19.20	23.33	27.32	30.72	40.37	52.28
	related to joints length (m ³ /hm)	1.75	2.64	3.48	4.23	4.95	5.57	7.31	9.47
	related to overall area (m ³ /hm ²)	2.01	3.03	3.99	4.85	5.68	6.39	8.39	10.87

Table 4

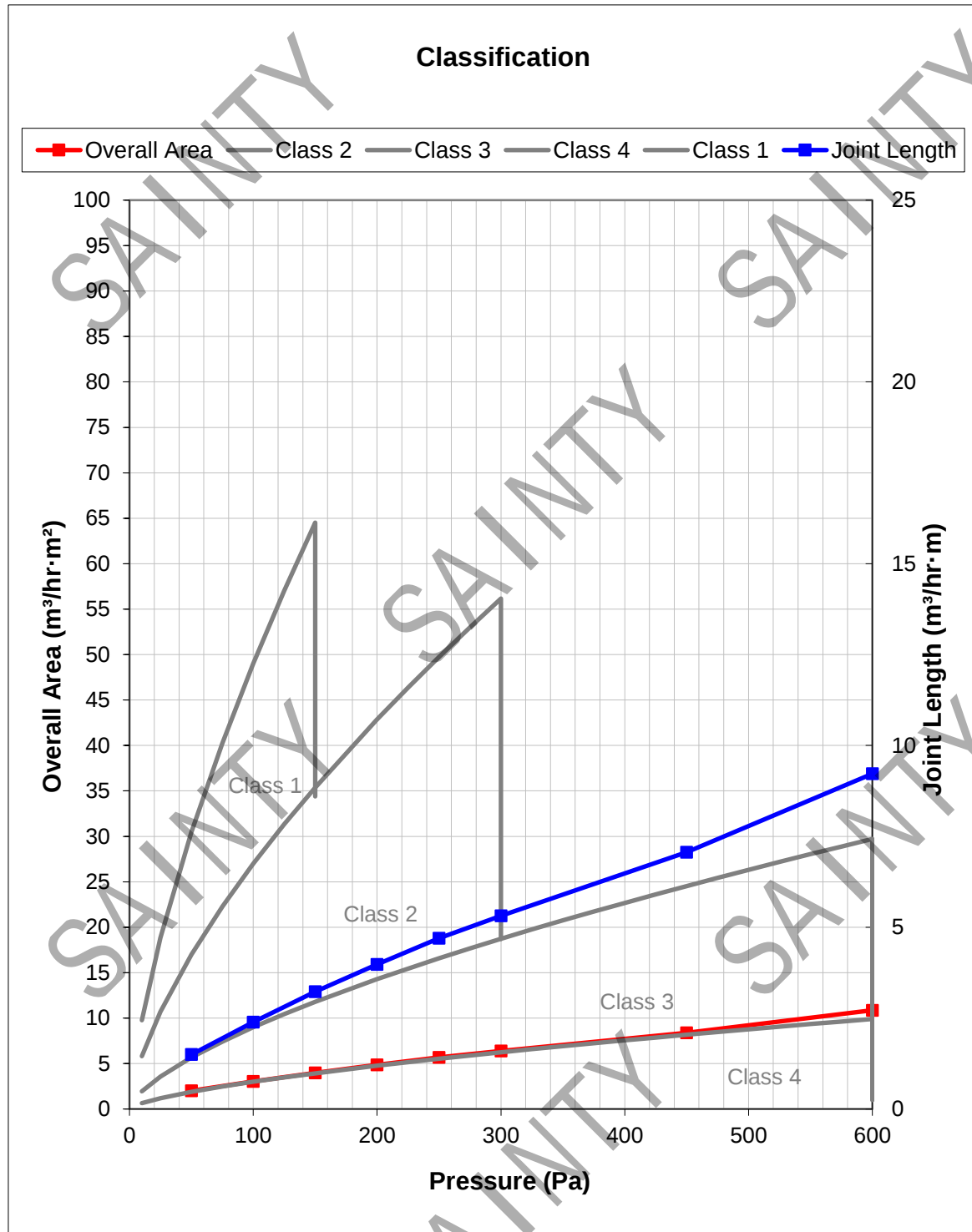
Reference air permeability at 100 Pa related to joints length	$Q_{100} = 2.64 \text{ m}^3/\text{hm}$
Reference air permeability at 100 Pa related to overall area	$Q_{100} = 3.03 \text{ m}^3/\text{hm}^2$
Classification related to joints length (<i>with regard to pressure dependence of air permeability</i>) according to EN 12207	Class: 2
Classification related to overall area (<i>with regard to pressure dependence of air permeability</i>) according to EN 12207	Class: 3
classification of the test specimen according to EN 12207	Class: 3

Test Report

Issue Date: 2019-11-12

Intertek Report No. 190930005SHF-001

Chart 1 - Air Permeability before Wind load



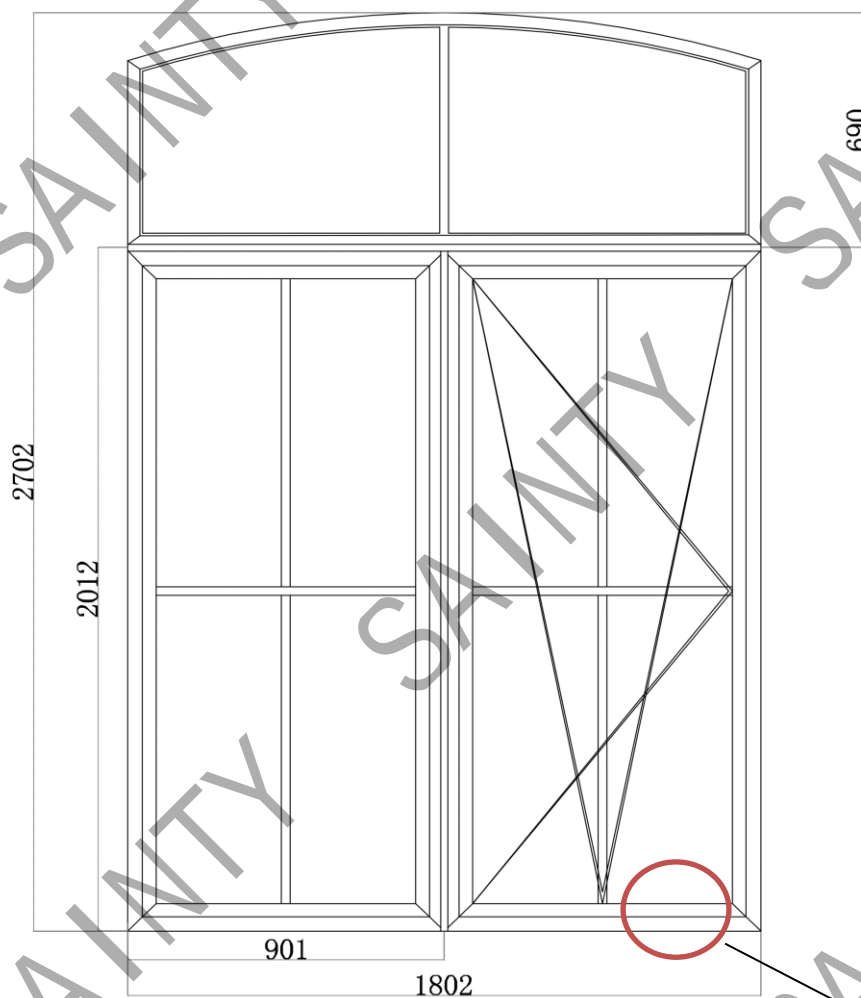
Test Report

Issue Date: 2019-11-12

Intertek Report No. 190930005SHF-001

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

Window Drawings



Water penetration position

Water penetration: When water sprayed for 50 seconds at 150 Pa, the water penetration started at the bottom of the operable sash.

Test result:

$P_{\max} = 100 \text{ Pa}$

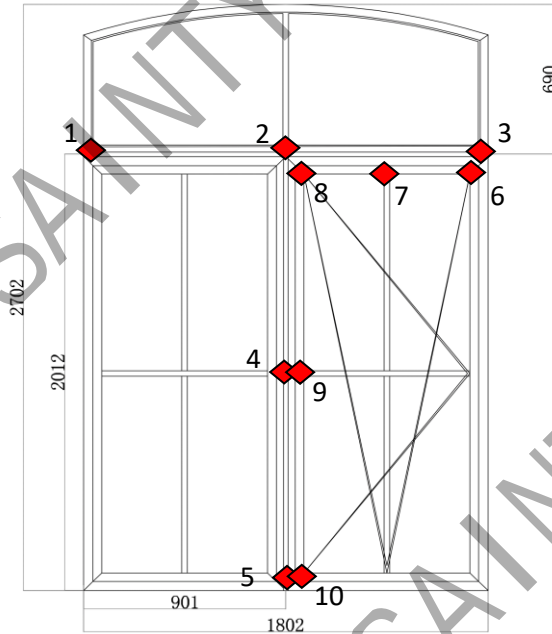
Test Report

Issue Date: 2019-11-12

Intertek Report No. 190930005SHF-001

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

3.1 Deflection test



(1, 2, 3, 4, 5, 6, 7, 8, 9, 10 are location of gauges)

Frame member length L1(1,2,3) = 1760 mm

Frame member length L2 (2,4,5)= 1990 mm

Frame member length L3 (6,7,8)= 770 mm

Frame member length L3 (8,9,10)= 1860 mm

Table 5

Gauge No.	Frontal displacement (deflection) values (mm)							
	Positive pressure $+P_1$	Zero pressure P_0	Frontal deflection F_p (mm)	Relative frontal deflection $F_{rp} = F_p/L$	negative pressure P_1	Zero pressure P_0	Frontal deflection F_p (mm)	Relative frontal deflection $F_{rp} = F_p/L$
1	1.1	0.0	7.05	1/250	1.3	0.0	7.30	1/241
2 centre	8.3	0.0			8.8	0.2		
3	1.4	0.0			1.3	0.0		
2	8.3	0.0	3.60	1/553	8.8	0.2	3.75	1/531
4 centre	8.2	0.0			8.8	0.2		
5	0.9	0.0			1.1	0.0		
6	1.9	0.0	0.15	1/5133	1.7	0.0	0.10	1/7700
7 centre	6.1	0.0			6.6	0.2		
8	10.1	0.1			11.1	0.2		
8	10.1	0.1	2.25	1/827	11.1	0.2	2.75	1/676
9 centre	8.0	0.1			8.8	0.3		
10	1.3	0.0			0.8	0.2		

3.2 Repeated pressure test

50 cycles of negative and positive pressure $P_2 = 0.5 \times P_1 = 600$ Pa

Test Result:

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

Test Report

Issue Date: 2019-11-12

Intertek Report No. 190930005SHF-001

3.3 Windows and doors – Air permeability – Test method EN 1026 – after wind load

- Length of opening joints: 5.52 m
- Overall area: 4.81 m²

Table 6

Air permeability at positive pressure	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability								
	absolute (m ³ /h)	10.63	15.65	21.76	36.72	46.77	56.22	87.23	123.86
	related to joints length (m ³ /hm)	1.93	2.84	3.94	6.65	8.47	10.18	15.80	22.44
	related to overall area (m ³ /hm ²)	2.21	3.25	4.52	7.63	9.72	11.69	18.14	25.75

Table 7

Air permeability at negative pressure	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability								
	absolute (m ³ /h)	9.35	13.59	16.05	17.82	19.69	21.46	25.50	29.93
	related to joints length (m ³ /hm)	1.69	2.46	2.91	3.23	3.57	3.89	4.62	13.60
	related to overall area (m ³ /hm ²)	1.94	2.83	3.34	3.70	4.09	4.46	5.30	6.22

Test Report

Issue Date: 2019-11-12

Intertek Report No. 190930005SHF-001

Table 8

Average air permeability	Test pressure step (Pa)	50	100	150	200	250	300	450	600
	Air permeability								
	absolute (m ³ /h)	9.99	14.62	18.90	27.27	33.23	38.84	56.37	76.90
	related to joints length (m ³ /hm)	1.81	2.65	3.42	4.94	6.02	7.04	10.21	13.93
	related to overall area (m ³ /hm ²)	2.08	3.04	3.93	5.67	6.91	8.07	11.72	15.99

Table 9

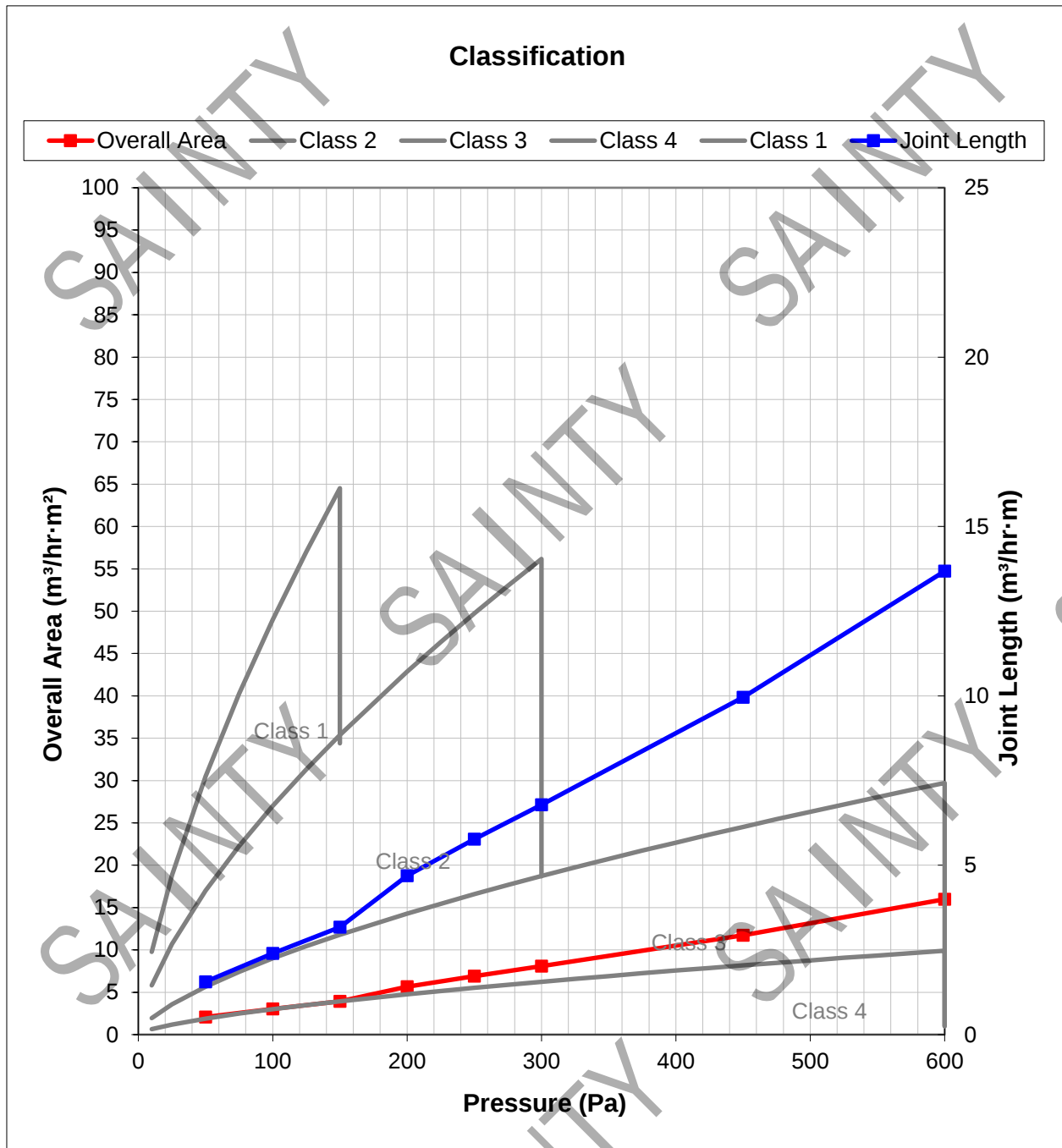
Reference air permeability at 100 Pa related to joints length	$Q_{100} = 2.65 \text{ m}^3/\text{hm}$
Reference air permeability at 100 Pa related to overall area	$Q_{100} = 3.04 \text{ m}^3/\text{hm}^2$
The requirement for maximum air permeability (120% of upper limit value) at 100 Pa for the given class – Class 2 (after wind load) related to joints length	8.1 m ³ /hm
The requirement for maximum air permeability (120% of upper limit value) at 100 Pa for the given class – Class 3 (after wind load) related to overall area	10.8 m ³ /hm ²

Test Report

Issue Date: 2019-11-12

Intertek Report No. 190930005SHF-001

Chart 2 - Air Permeability after Wind load



Test Report

Issue Date: 2019-11-12

Intertek Report No. 190930005SHF-001

3.4 Safety test

1 cycle including negative and positive test pressure $P3 = 1.5 \times P1 = 1800 \text{ Pa}$

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.

Test Report

Issue Date: 2020-06-18

Intertek Report No. 200529005SHF-001

Appendix A: Sample Received Photo



Revision:

NO.	DATE	CHANGES	AUTHOR	REVIEWER
200529005SHF-001	2020-06-18	First issue	Gio Liu	Zac Zhang