

Taixing Sainty Industry Co., Ltd.

TEST REPORT

SCOPE OF WORK

Sliding Door

REPORT NUMBER

221010012SHF-001

TEST DATE(S)

2022-10-11

ISSUE DATE

2022-10-28

PAGES

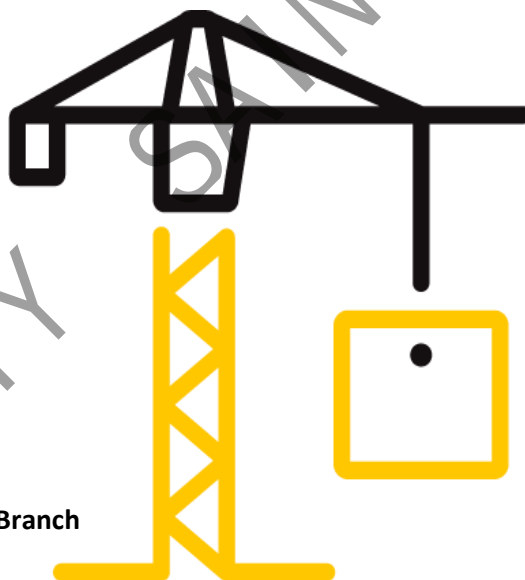
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DOCUMENT CONTROL NUMBER

LFT-APAC-SHF-OP-10k(September 1, 2022)

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Intertek Testing Services Shenzhen Ltd. Shanghai Fengxian Branch



Test Report

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Test Report

Issue Date: 2022-10-28 Intertek Report No. 221010012SHF-001

Applicant: Taixing Sainty Industry Co., Ltd.
Applicant Address: No.88, Zhuwei, Jiangwei Dept 5, Quxia city, Jiangsu Province, China
Attn: Yin Zhaohua
Manufacturer : Shandong Sainty Aluminium Limited
Manufacturer Address: No.88, Baogou Town, Zaozhuang city, Shandong Province, China
SUBJECT: Performance test, samples provided by the applicant.

Product Information

Product Name	Sliding Door	Brand	Sainty
Sample Description	Good Condition	Sample Amount	1 set
		Received Date	2022-09-27
Sample ID	Model	Specification	
S221010012SHF.001	ST-22003	3100mm(W) x 2400mm(H)	

Test Methods And Standards

Test Standard	ASTM E283/E283M-2019; ASTM E547-00 (Reapproved 2016); ASTM E330/E330M-2014(R2021)
Specification Standard	AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS 2017 - North American Fenestration Standard / Specification for Windows, Doors and Skylights) Clause 9.3.2, Clause 9.3.3, Clause 9.3.4; CSA A440S1-19 Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440-17 Clause 5.4 and Clause 5.5
Test Conclusion	The samples were tested accordance with Class CW requirements for Sliding Door, and the results are shown in the following page.

Note:

1.This report relates specifically to the sample(s) that were drawn and provided by the applicant or their nominated third party. The reported result(s) provide no warranty or verification on the sample(s) representing any specific goods and/or shipment and only relate to the sample(s) as received and tested.

Report Authorized


Name: Zac Zhang Name: Gio Liu
Title: Reviewer Title: Project Engineer

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Test Items, Method and Results:

1 Test Samples

Sample was submitted to Intertek directly from the client. Sample was not independently selected for testing. Sample was received at the Evaluation Center on September 27, 2022.

A full scale sample of Sliding Door (Model: ST-22003) was provided by the manufacturer that was not weathered nor conditioned.

The description of the samples given below has been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

Table 1 Product Information

Product Name	Sliding Door
Model	ST-22003
Dimension of Door Frame	3100mm(Width) x 2400mm(Height) x 155mm(Thickness)
Dimension of Door Leaf	Operable Sash: 1573mm(Width) x 2314mm(Height) x 52mm(Thickness) Fixed Sash: 1578mm(Width) x 2331mm(Height) x 52mm(Thickness)
Aluminum Profile	Model: YM001A; YM001B; YM002A; YM002B; YM003A; YM003B; YM004; YM005; YM006; YM008; YM009; YM010; YM011; YM007; YM012 Material: 6063-T5 Manufacturer: Shandong Sainty Aluminium Limited
Frame Corner Construction Details: Joinery type	Mitre-cut, assembly with Set Angle machine
Reinforcement	None
Glazing	Dimension: Operable: 1390.2mm(Width) x 2135mm(Height); Fixed: 1390.69mm(Width) x 2145mm(Height) Structure: 6mm + 16mm A + 6mm Tempered Glass Supplier: Shandong Fenghua Glass Co.,Ltd.
Hardware	Specify type: Lock Point, Bumper Block, Corner Device, Drive Shaft, Handle, Pulley Block, Active Lock Point Kit, Guide Pulley Model: 798224; 635307; 260272; 862367; RC2; 785927; 862395; 793493; 798979 Supplier: Roto
Weather-strip	Model: ST155PT Material: EPDM Supplier: HeBei Guangyuan Plastic Co., Ltd.
Thermal Break	Model: BTB3035; BTB3036 Material: PA66GF25 Supplier: Qingdao Baotai Pastic Co., Ltd.
Drainage	Sizes: 6mm x 30mm Quantity: 2

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Table 1 Product Information (Continued)

Gasket	Model: BT3035; BT3036 Material: EPDM Supplier: Qingdao Baotai Pastic Co., Ltd.
Sealant of Glass	Model: ST-1 silicone sealant Material: silicone sealant Supplier: Shandong Sainty Aluminum Limited
Installation	Put the assembled outer frame into the hole, fix it on the wall with screws. Install the glass into the door leaf and glue the sealant. After drying thoroughly, install the fixed leaf first and fix it, then put the door sliding leaf into the outer frame for debugging. Finally install the handle.

The sample ID number was S221010012SHF.001. The drawings of the representative sample were referenced in Appendix A, the test data was referenced in Appendix B and the photo of the representative sample was referenced in Appendix C.

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Test Items, Method and Results:

2 Test Result

Table 2 Test Result

Test Description	Requirements	Results	Verdict
2022/10/11			
Air Leakage Resistance Test AAMA/WDMA/CSA101/I.S.2/A440-17, Clause 9.3.2 ASTM E283/E283M-2019	Maximum air leakage at +75 Pa	1.0 L/s·m ² Air leakage at +75 Pa	Pass
	Maximum air leakage at -75 Pa	1.0 L/s·m ² Air leakage at -75 Pa	
Water Penetration Resistance Test AAMA/WDMA/CSA101/I.S.2/A440-17, Clause 9.3.3 ASTM E547-2000 (R2016)	Minimum water pressure	220 Pa	Pass
		Test Pressure 290 Pa After water sprayed for complete four cycles in 24 minutes at 290 Pa, no water penetration was observed.	
Uniform Load Deflection Test AAMA/WDMA/CSA101/I.S.2/A440-17, Clause 9.3.4.2 ASTM E330/E330M-2014 (R2021)	Minimum Design Pressure (DP)	1440 Pa	Pass
		Design Pressure (DP)	
		Maximum deflection at Stile at handle side	
Uniform Load Structural Test AAMA/WDMA/CSA101/I.S.2/A440-17, Clause 9.3.4.3 ASTM E330/E330M-2014 (R2021)	Minimum Structural Pressure (STP)	2160 Pa	Pass
		Structural Pressure (STP)	
		No significant breakage or damage after ultimate strength was released.	
		Maximum permanent deformation at Stile at handle side	
		Maximum permanent deformation at Mullion	

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Appendix A: Sample Drawings

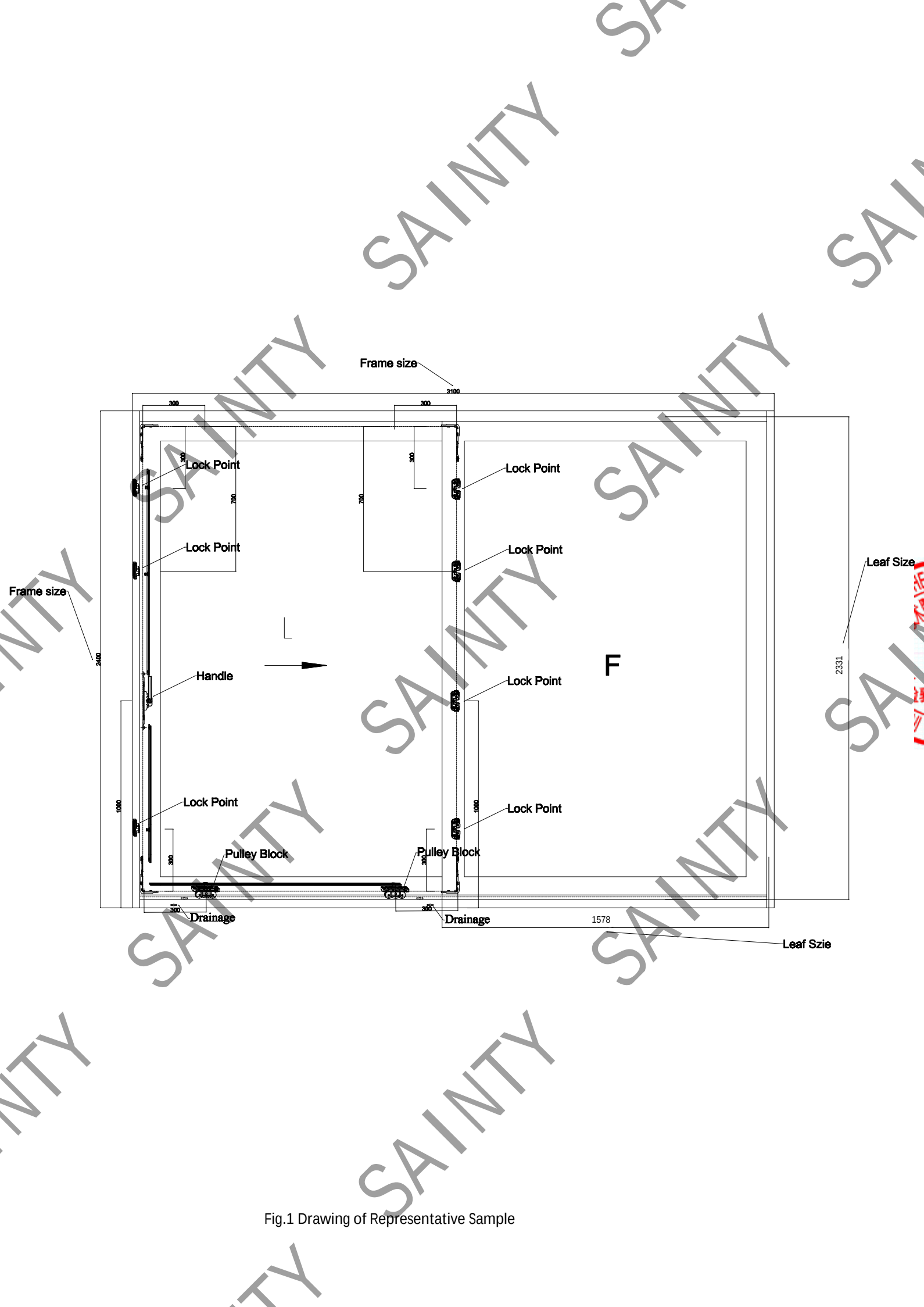
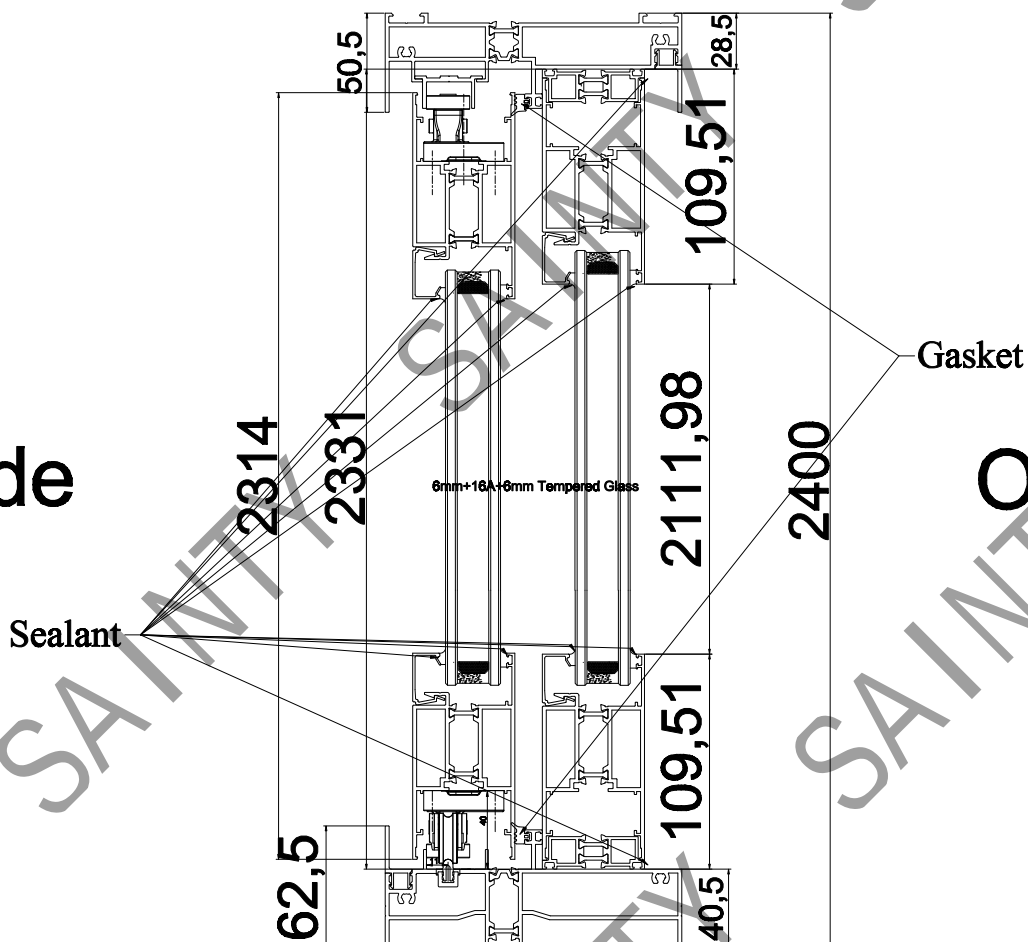


Fig.1 Drawing of Representative Sample

Inside

Outside



Inside

Outside

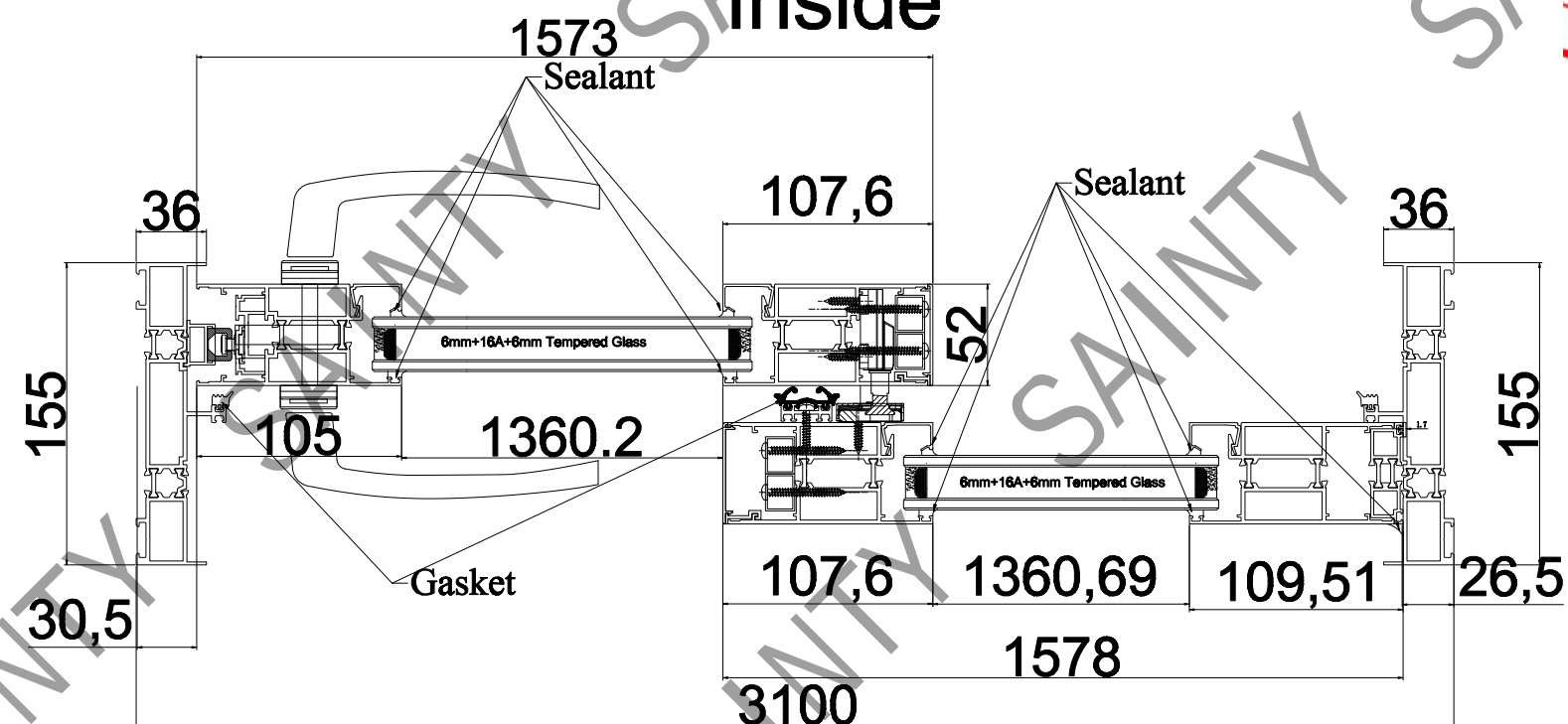
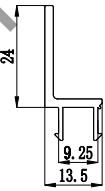
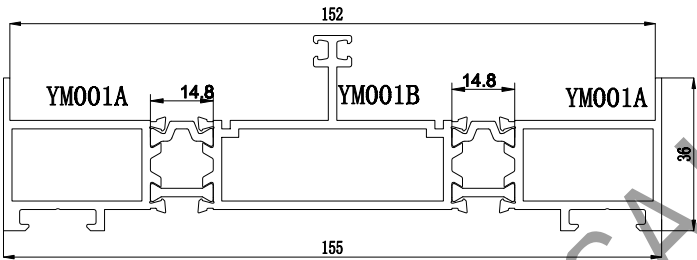
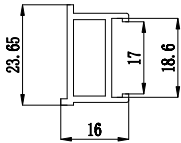


Fig.2 Drawing of Representative Sample

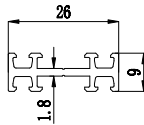
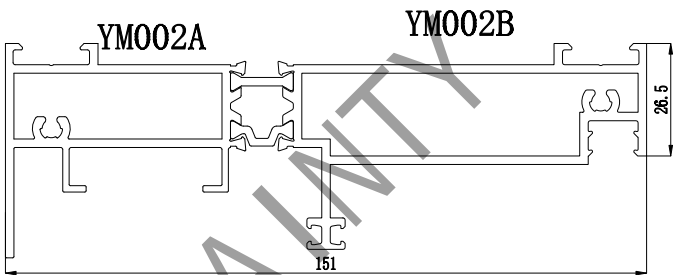
Extrusion profile



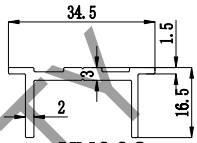
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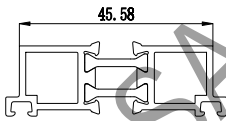
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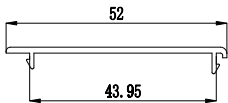
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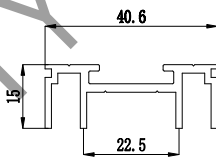
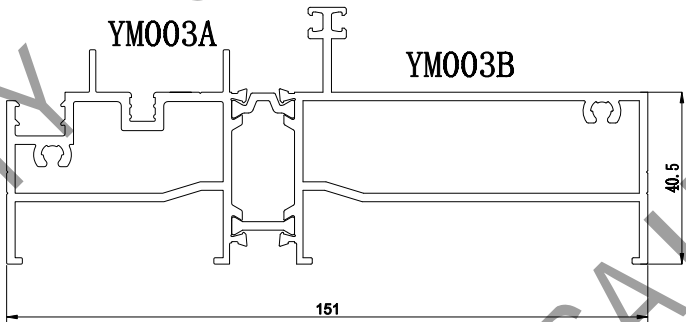
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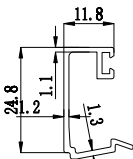
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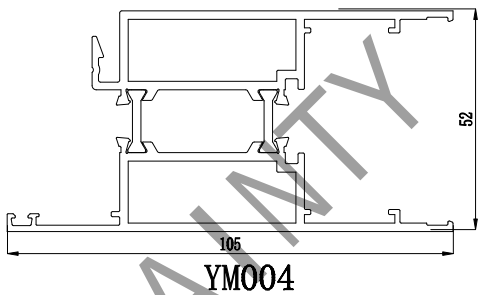
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YM007

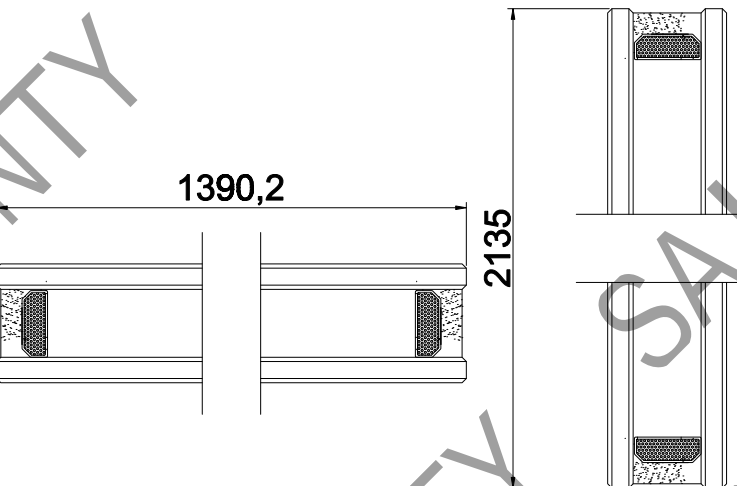


YM012



YM004

Glass Sliding Leaf



Glass Fixed Leaf

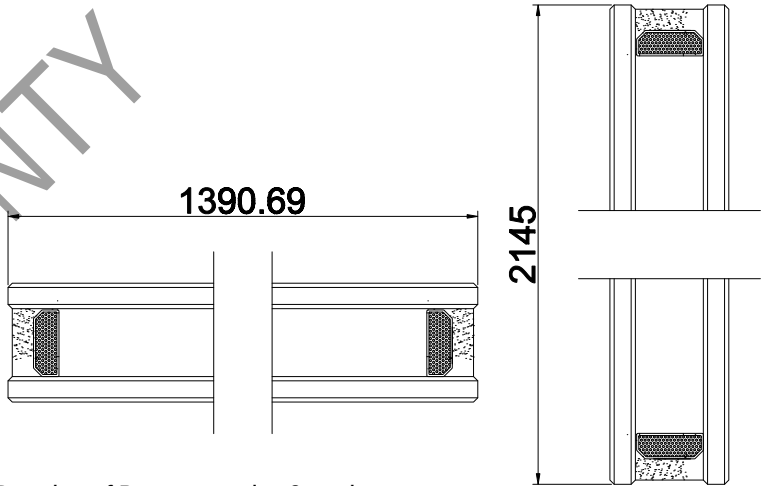
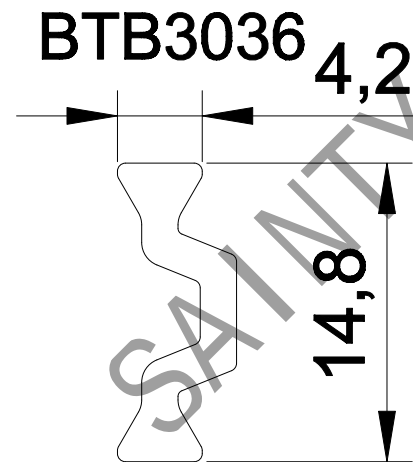
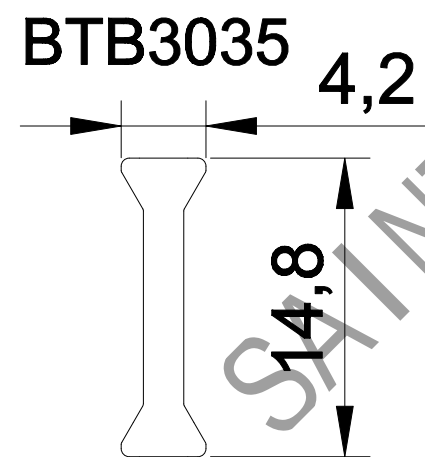


Fig.3 Drawing of Representative Sample

Thermal Break



Gasket

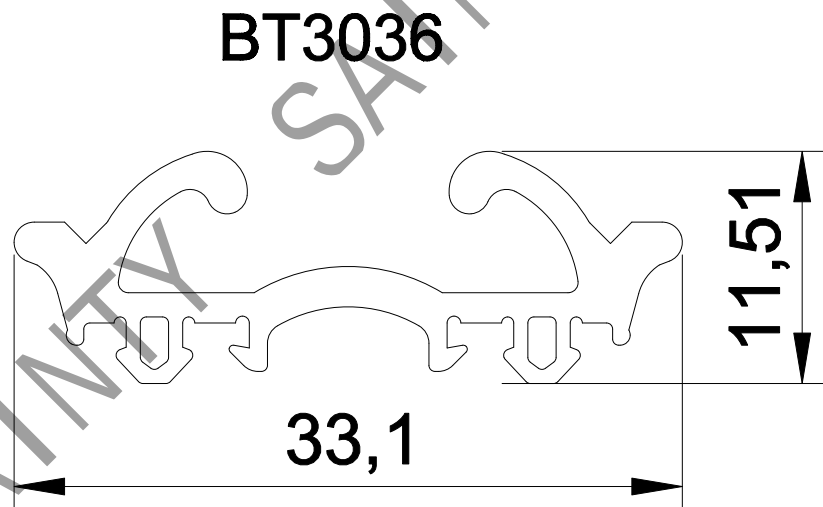
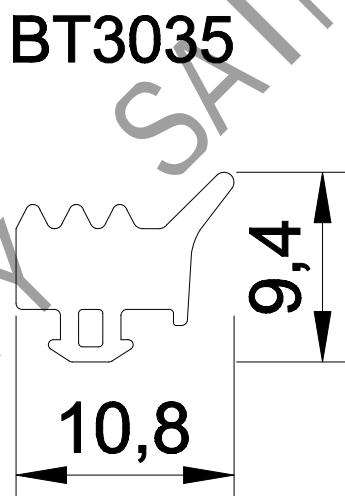
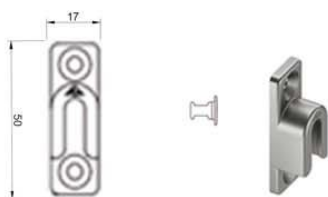
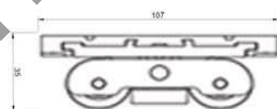


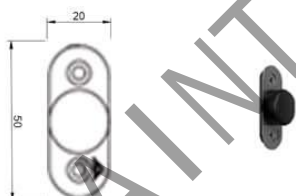
Fig.4 Drawing of Representative Sample



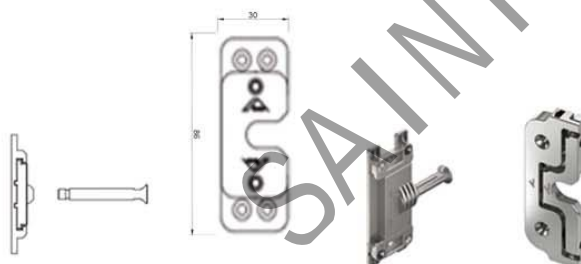
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Lock Point**



**Model:785927
Pulley Block**



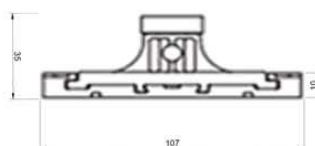
**Model:635307
Bumper Block**



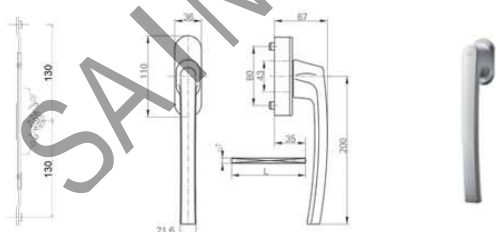
**Model:862395+793493
Active lock point kit**



**Model:260272
Corner Device**

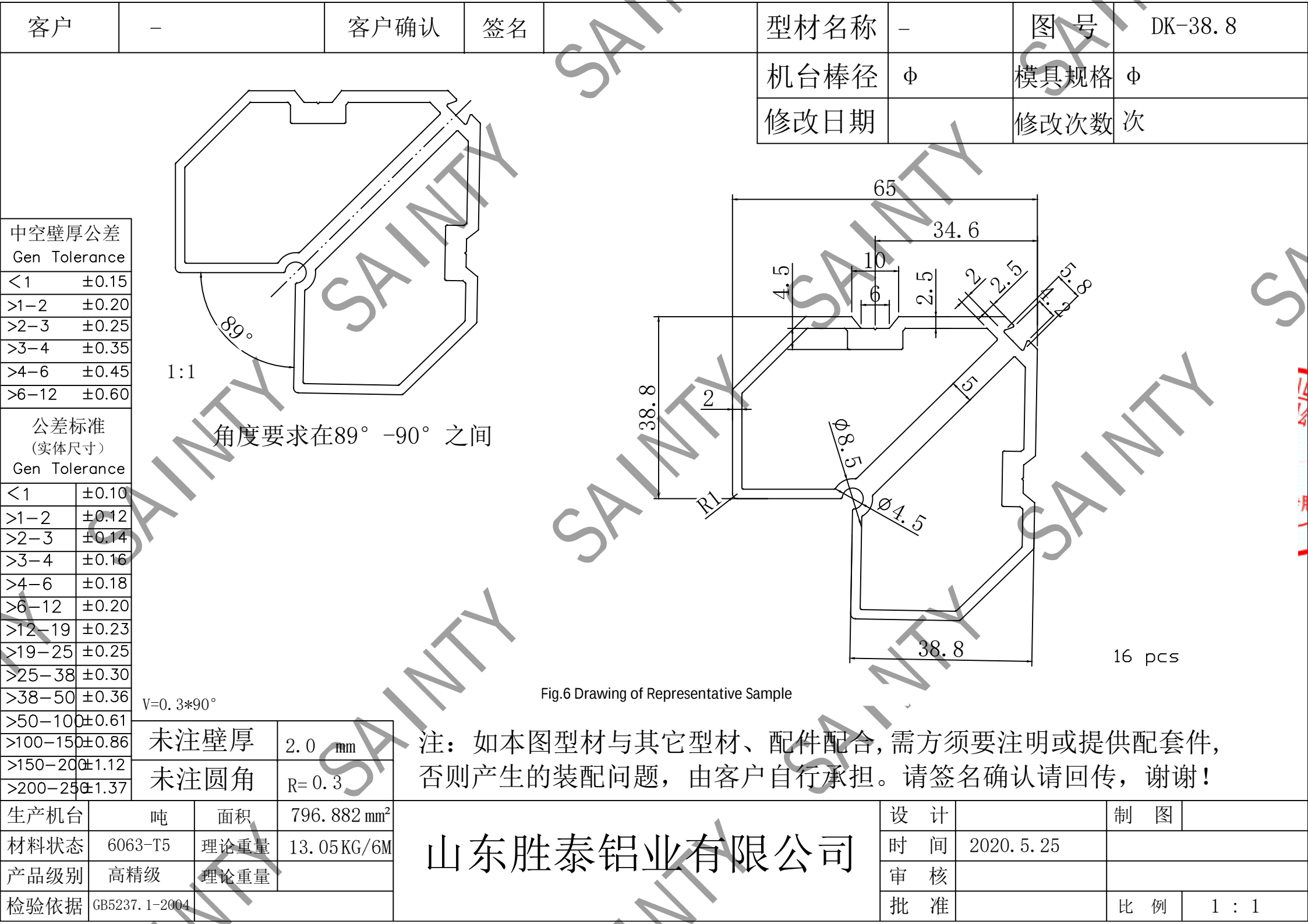


**Model:798979
Guide Pulley**



**Model:862367+RC2
Main Drive Shaft + Handle**

Fig.5 Drawing of Representative Sample



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Appendix B: Test Data

B.1 Air Leakage Resistance Test – Test method ASTM E283/E283M-2019

Overall area: 7.44 m²

Table B.1 Test Data of Air Leakage Resistance Test

Infiltration rate (75 Pa)	0.23 L/s·m ²	0.05 cfm/ft ²
Exfiltration rate (75 Pa)	0.21 L/s·m ²	0.04 cfm/ft ²
Average air leakage rate (75 Pa)	0.22 L/s·m ²	0.05 cfm/ft ²
Requirements: Air leakage rate for Class CW Sliding Door (75 Pa)	1.0 L/s·m ²	0.20 cfm/ft ²

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Appendix B: Test Data

B.2 Water resistance test – Test method ASTM E547-00 (Reapproved 2016)

No water penetration occurred when the pressure was 290 Pa (6.06 psf).

After water sprayed for complete four cycles in 24 minutes at 290 Pa (6.06 psf), no water penetration was observed.

Test result: $P_{\max} = 290 \text{ Pa (6.06 psf)}$.

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Appendix B: Test Data

B.3 Uniform Load Deflection Test – Test method ASTM E330/E330M-2014(R2021), Procedure A

Span length, L = 2200 mm

Set Points (1-3)

Span length, L = 2200 mm

Set Points (4-6)

Test Pressure (DP), P = 1440 Pa (30.08 psf)

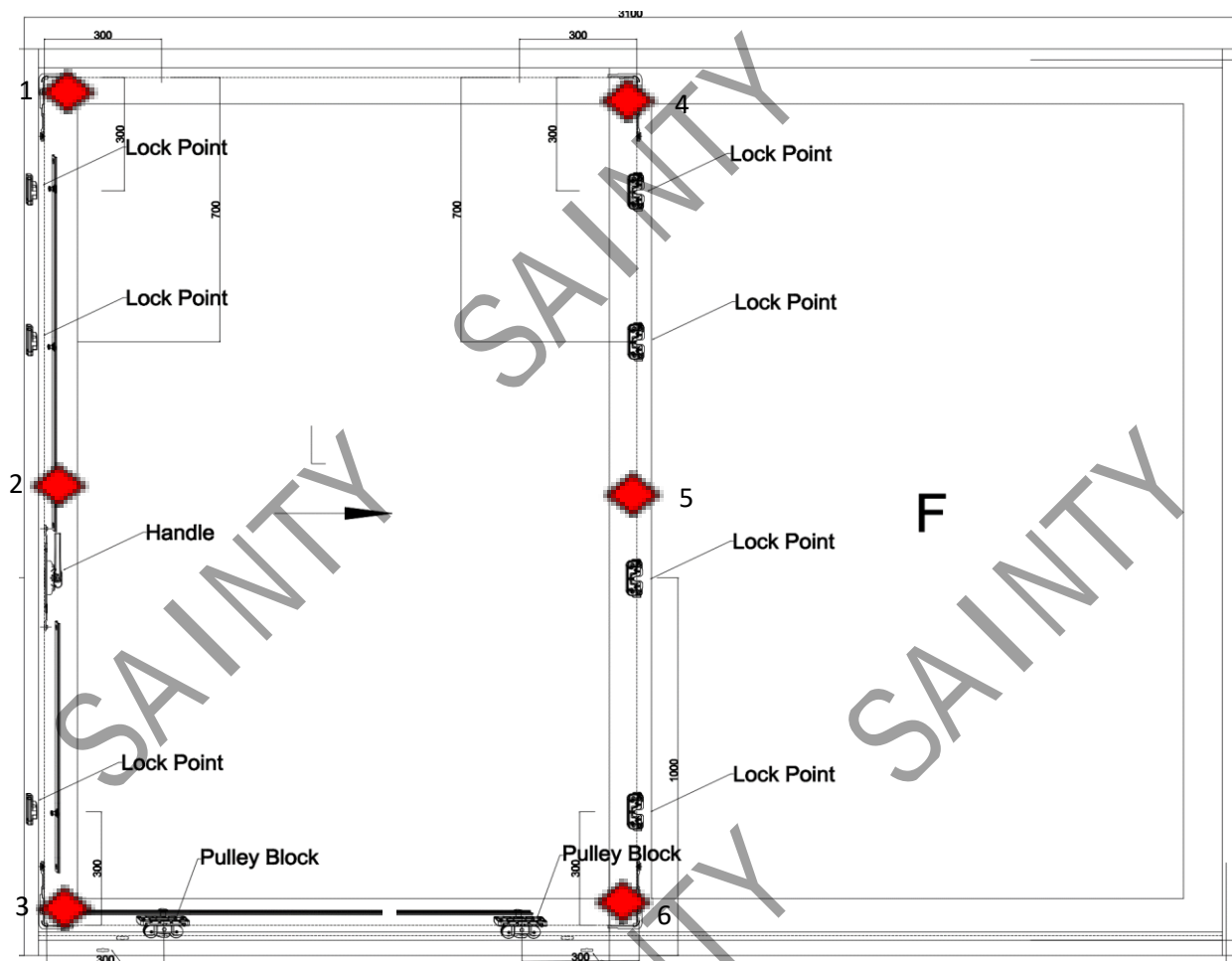


Fig.7 Locations of Displacement Measuring Devices

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Table B.2 Test Data of Uniform Load Deflection Test

Member (mm)		Test Pressure (Pa)	Deflection (mm)			Maximum Deflection(mm)
Item	Span Length		1	2	3	
Stile at handle side	2200	+P = 1440	7.7	7.0	1.4	2.5
		0	2.2	0.8	0.3	<0.1
		-P = -1440	4.8	5.8	1.4	2.7
		0	2.1	1.0	0.6	<0.1
Member (mm)		Test Pressure (Pa)	Deflection (mm)			Maximum Deflection(mm)
Item	Span Length		4	5	6	
Mullion	2200	+P = 1440	3.8	14.6	2.5	11.5
		0	0.7	1.8	0.5	1.2
		-P = -1440	4.3	14.5	3.0	10.9
		0	0.7	1.7	0.5	1.1

Table B.3 Test Data of Uniform Load Deflection Test for Stile at handle side

Test Pressure	Deflection Measurements, mm (in.)			
	Positive		Negative	
	Maximum Deflection		Maximum Deflection	
1440 Pa (30.08 psf)	2.5	(0.10)	2.7	(0.11)
Span length, L =	2200 mm	(86.61 in.)	Deflection limit L/175 =	12.6 mm (0.49 in.)

Table B.4 Test Data of Uniform Load Deflection Test for Mullion

Test Pressure	Deflection Measurements, mm (in.)			
	Positive		Negative	
	Maximum Deflection		Maximum Deflection	
1440 Pa (30.08 psf)	11.5	(0.45)	10.9	(0.43)
Span length, L =	2200 mm	(86.61 in.)	Deflection limit L/175 =	12.6 mm (0.49 in.)

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Appendix B: Test Data

B.4 Uniform Load Structural Test – Test method ASTM E330/E330M-2014(R2021), Procedure A

Design Pressure, P = 1440 Pa (30.08 psf)

Structural Pressure, P = 2160 Pa (45.11 psf)

Table B.5 Test Data of Uniform Load Structural Test

Member (mm)		Test Pressure (Pa)	Permanent deformation(mm)			Maximum permanent deformation(mm)
Item	Span Length		1	2	3	
Stile at handle side	2200	+P = 2160	–	–	–	–
		0	4.0	2.2	0.9	<0.1
		-P = -2160	–	–	–	–
		0	3.9	2.1	0.8	<0.1
Permanent Deformation limit, L x 0.3% = 6.6 mm						
Member (mm)		Test Pressure (Pa)	Permanent deformation(mm)			Maximum permanent deformation(mm)
Item	Span Length		4	5	6	
Mullion	2200	+P = 2160	–	–	–	–
		0	1.0	2.6	0.7	1.8
		-P = -2160	–	–	–	–
		0	1.1	2.5	0.2	1.9
Permanent Deformation limit, L x 0.3% = 6.6 mm						

Table B.6 Test Data of Uniform Load Structural Test For Stile at handle side

Test Pressure	Deflection Measurements, mm (in.)			
	Positive		Negative	
	Perm. Set		Perm. Set	
2160 Pa (45.11 psf)	<0.1	(<0.01)	<0.1	(<0.01)

Table B.7 Test Data of Uniform Load Structural Test For Mullion

Test Pressure	Deflection Measurements, mm (in.)			
	Positive		Negative	
	Perm. Set		Perm. Set	
2160 Pa (45.11 psf)	1.8	(0.07)	1.9	(0.07)

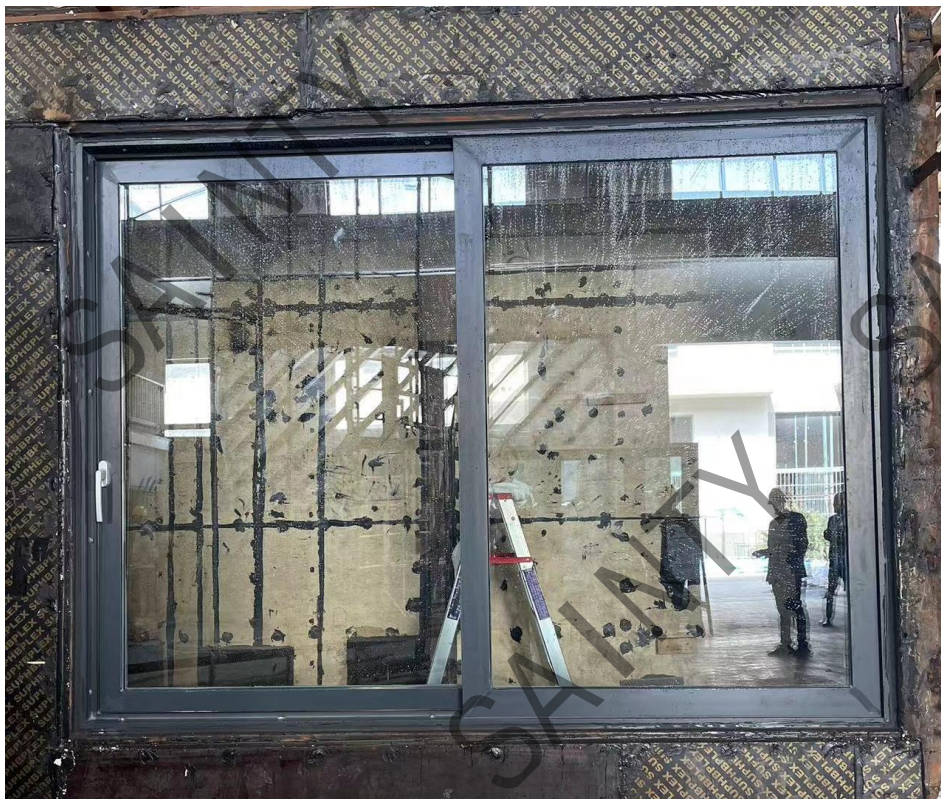
After the test loads were released, there was no failure or permanent deformation of any part of the window system that would cause the test specimen to be inoperable. There was no permanent deformation which was in excess of 0.3% of its span.

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Appendix C: Sample Received Photo



Revision:

NO.	Date	Changes
221010012SHF-001	2022-10-28	First issue