

CLIENT: **Foshan DTOP Window and Doors Co., Ltd.**
No. 3 PnAo Factory, Shi Bei Minxi Village
Foshan, Guangdong, 528225

Project No: QA-1225c W&D

Report Date: January 10, 2026

SAMPLE ID: Series: Folding Door

SAMPLE DESCRIPTION: Width: 960 mm; Height: 2090 mm; See page 3-4 for full description.

SAMPLING DETAIL: The test sample manufactured by **Foshan DTOP Window and Doors Co., Ltd.** was submitted directly to QAI by the client. Samples were not independently selected for testing.

DATE OF RECEIPT: Samples were received at the QAI Medley Laboratories on January 2, 2026

TESTING PERIOD: January 5, 2026

EXPIRATION DATE: January 5, 2031

TESTING LOCATION: QAI Laboratories – Medley, Florida, USA

AUTHORIZATION: Proposal Number QAI-775 dated March 19, 2025, signed by Manger Doris Dong, dated March 26, 2025

TEST PROCEDURE: Testing to the following requirements:

- NFRC 102-2023 Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems

TEST RESULTS: The Folding Door achieved the results found on pages 4-5 of this test report when tested in accordance with the NFRC 102.

CONTENTS: Test report pages 1 through 7.

Prepared by

Monika Sanchez

Monika Sanchez

**Signed for and on behalf of
QAI Laboratories**

 Digitally signed by
Jose Sanchez
Date: 2026.01.17
11:35:38 -05'00'

Jose Sanchez
Person-in-Responsible-Charge

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PRODUCT DESCRIPTION

Model Designation:	Folding Door
Operating Type:	EDSL
Overall Size:	960 mm (37 3/4") by 2090 mm (82 3/8") high
NFRC Standard Size:	960 mm (37 3/4") by 2090 mm (82 3/8") high
Overall Panel Size:	869 mm (34 3/16") by 2090 mm (78 3/4") high

Frame and Panel Construction

Frame Construction, Material, Color and Finish:	(AT) Painted aluminum alloy with thermal breaks. Miter corners fastened using a corner key
Panel Construction, Material, Color and Finish:	(AT) Painted aluminum alloy with thermal breaks. Miter corners fastened using a corner key

Glazing Description

Layer 1:	0.231" double low E on surface #2 e=0.042
Gap:	0.362" gap using a super spacer
Layer 2:	0.231" double low E on surface #4 e=0.042
Gap:	0.362" gap using a super spacer
Layer 3:	0.231"

Glazing Method

Interior Condition:	Silicone
Exterior Condition:	Silicone

Gas Type	Filling Technique	Gas Fill Percentage
Argon	Dual Probe	95%

Daylight Opening

29 1/2" by 72 5/8" high

Weather Stripping

Quantity	Description	Location
Single Row	EPDM	Perimeter of frame and panel

Hardware

Quantity	Description	Location
Three	Surface mount metallic hinges	Frame jamb
One	Surface mount metallic handle with lock	Lock stile

Weep Holes

Quantity	Description	Location
None	None	None

Reinforcement

Material	Location
None	None

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Dividers/Grids		
Grid Size	Material	Grid Pattern
None	None	None

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Measured Test Data

Heat Flows

1. Total Measured Input into Metering Box (Q_{total})	963.11 Btu/hr
2. Surround Panel Heat Flow (Q_{sp})	398.80 Btu/hr
3. Surround Panel Thickness	4.0 inches
4. Surround Panel Conductance	0.055 Btu/hr·ft ² ·F
5. Metering Box Wall Heat Flow (Q_{mb}) and Flanking Heat Flow (Q_{fl})	-16.36 Btu/hr
6. EMF vs Heat Flow Equation (equivalent information)	$y=5.3117x+10.343$
7. Net Specimen Heat Loss (Q_s)	660.68 Btu/hr

Areas

1. Test Specimen Projected Area (A_s)	21.59 ft ²
2. Specimen, Projected Frame Area (A_f)	6.71 ft ²
3. Specimen, Projected Glazing Area (A_g)	14.88 ft ²
4. Test Specimen Interior Total (3-D) Surface Area (A_{int})	23.16 ft ²
5. Test Specimen Exterior Total (3-D) Surface Area (A_{ext})	22.58 ft ²
6. Metering Box Opening Area (A_{mb})	103.78 ft ²
7. Metering Box Baffle Area (A_{b1})	92.91 ft ²
8. Surround Panel Interior Exposed Area (A_{sp})	82.19 ft ²

Test Conditions

1. Average Metering Room Air Temperature	69.80 F
2. Average Cold Side Air Temperature	-0.12 F
3. Average Guard/Environmental Air Temperature	73.0 F
4. Metering Room Average Relative Humidity	12.1 %
5. Measured Cold Side Wind Velocity (Perpendicular Flow)	11.6 mph
6. Measured Static Pressure Difference Across Test Specimen	0.0 psf

Surface Temperature Data

1. Warm side surround panel	66.21 F
2. Cold side surround panel	0.41 F

Results

1. Thermal Transmittance of Test Specimen (U_s)	0.45 Btu/hr·ft ² ·F
2. Standardized Thermal Transmittance of Test Specimen (U_{st})	0.43 Btu/hr·ft ² ·F

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Calculated Test Data

CTS Method

1. Room-Side Surface Emittance of CTS (e_1)	0.84
2. Room-Side Surface Emittance of Specimen Frame (ef_1)	0.90
3. Room-Side Surface Emittance of Specimen Glazing (eg_1)	0.84
4. Room-Side Surface Emittance of Exposed Surround Panel (e_{sp1})	0.90
5. Area-Weighted Emittance of all Room Side Surface in View of the baffle (e_{s1})	0.88
6. Warm Side Baffle Emittance (eb_1)	0.92
7. Equivalent Warm Side Surface Temperature	48.04 F
8. Equivalent Cold Side Surface Temperature	5.99 F
9. Warm Side Baffle Surface Temperature	67.95 F
10. Measured Warm Side Surface Conductance (hh)	1.45 Btu/hr·ft ² ·F
11. Measured Cold Side Surface Conductance (hc)	5.16 Btu/hr·ft ² ·F
12. Test Specimen Thermal Conductance (Cs)	0.75 Btu/hr·ft ² ·F
13. Convection Coefficient(Kc)	0.34 Btu/(hr·ft ² ·F ^{1.25})
14. Radiative Test Specimen (Qr1)	334.36 Btu/hr
15. Conductive Test Specimen Heat Flow (Qc1)	346.70 Btu/hr
16. Radiative Heat Flux of Test Specimen (qr1)	15.48 Btu/hr·ft ² ·F
17. Convective Heat Flux of Test Specimen (qc1)	16.05 Btu/hr·ft ² ·F
18. Standardized Warm Side Surface Conductance (hsth)	1.24 Btu/hr·ft ² ·F
19. Standardized Cold Side Surface Conductance (hstc)	5.28 Btu/hr·ft ² ·F
20. Standardized Thermal Transmittance (Ust)	0.43 Btu/hr·ft ² ·F

Test Duration

1. The environmental systems were started at 08:04 hours, on 1/4/2026.
2. The test parameters were considered stable for two consecutive four hour test periods from 00:04 hours, on 1/5/2026 to 08:04 hours, on 1/5/2026.
3. The thermal performance test results were derived from 04:04 hours, on 1/5/2026 to 08:04 hours, on 1/5/2026.

The reported Standardized Thermal Transmittance (Ust) was determined using CTS method per Section 8.2 (A) of NFRC 102.

Glazing Deflection (in.)	Panel
Gap width upon receipt of sample in Laboratories	0.362"
Gap width at Laboratories ambient condition on day of testing	0.362"
Center of gap at conclusion of test	0.355"

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Remarks
The sample was inspected for the formation of frost or condensation, which may influence the surface temperature measurements. The sample showed no evidence of condensation/frost at the conclusion of the test. The calibration of QAI Laboratories's "thermal test chamber" was conducted December 2025. "Ratings included in this report are for submittal to an NFRC-licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those options identified on a valid Certification Authorization (CA) are to be used for labeling purposes." The test sample was installed in a vertical orientation; the exterior of the specimen was exposed to the cold side. The direction of heat was from the interior (warm side) to the exterior (cold side) of the specimen. Drawings referenced in this document are an integral part of this report, therefore, are required when distributing this test report. Test results obtained represent the actual value of the tested specimens and do not constitute opinion, endorsement or certification by this Laboratories. Rounding of numerical values are per NFRC 601, NFRC Unit and Measurement Policy. Testing was conducted in full compliance with NFRC requirements. As per the client, the sample described in this test report was a production line for initial certification. An estimate of the measurement of uncertainty for these results is available upon request.

REVISION HISTORY:

1/10/2026: Initial report release

*****END REPORT*****

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APPENDIX

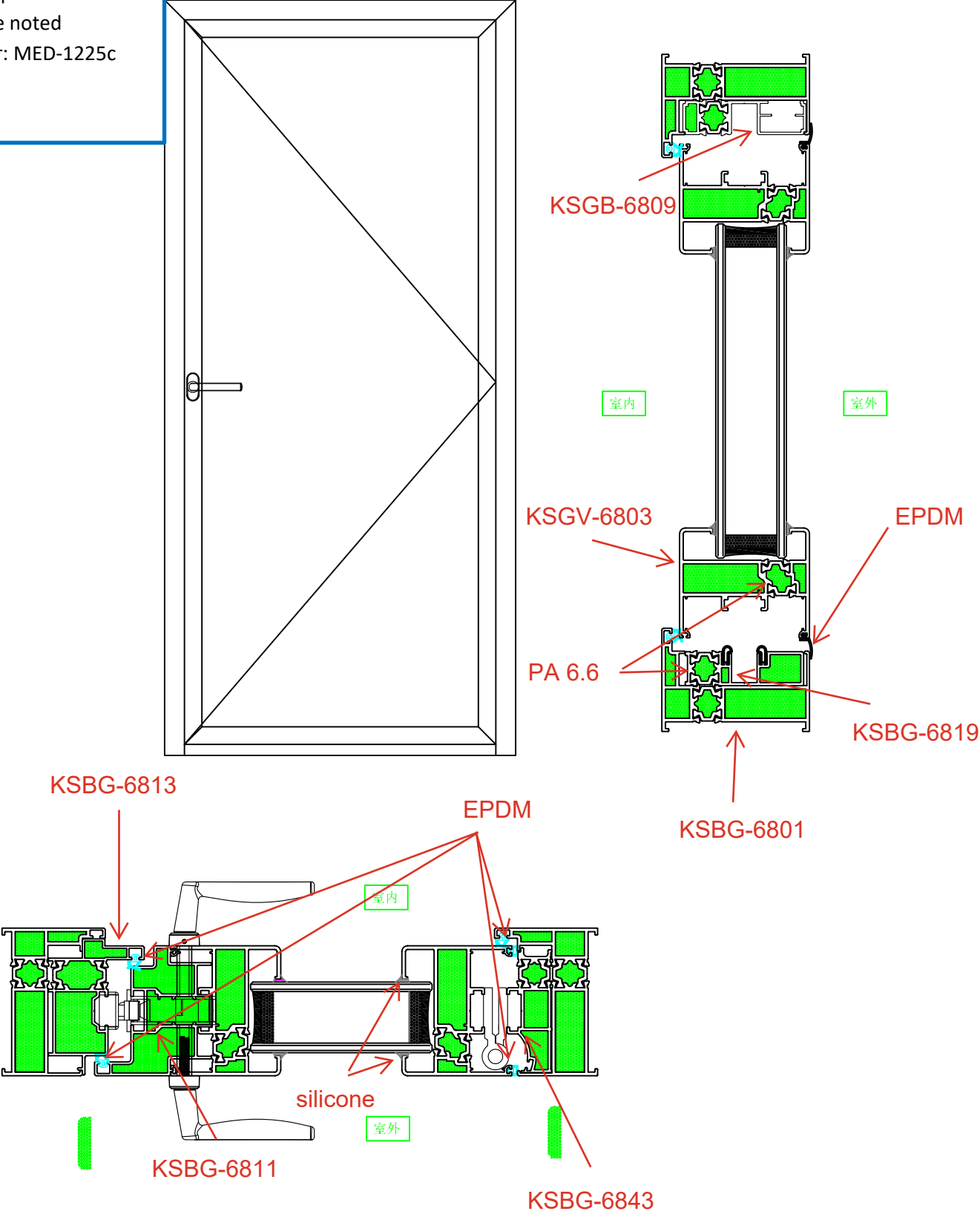
Fenestration Product Drawings and Bill of Material

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Assembly Drawing

All extrusions are painted aluminum alloy

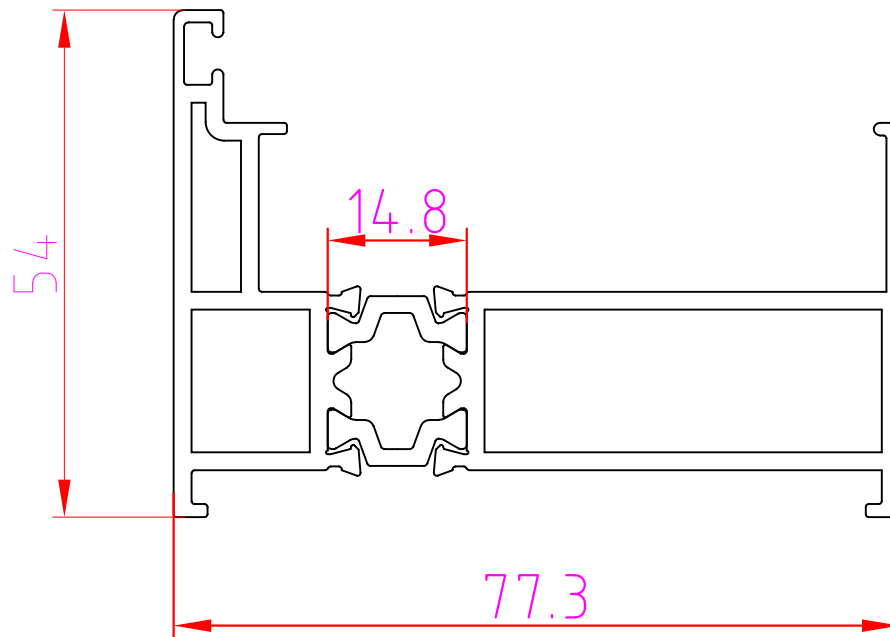
Tested Sample complies with this detail except where noted
Laboratory Number: MED-1225c
Date: 1/10/2026
Initials: JS



INSIDE

Tested Sample complies with this
detail except where noted
Laboratory Number: MED-1225c
Date: 1/10/2026
Initials: JS

All extrusions are 1.9 thick unless otherwise noted

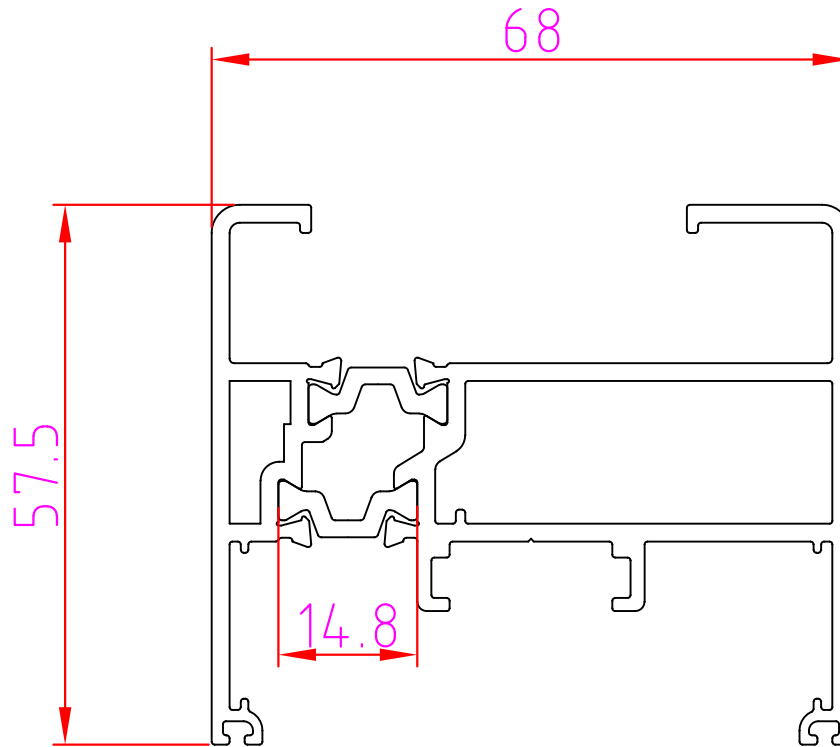


BOM Code	KSBG-6801
BOM Name	Outer frame
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

INSIDE

Tested Sample complies with this
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Date: 1/10/2026
Initials: JS

All extrusions are 1.9 thick unless otherwise noted

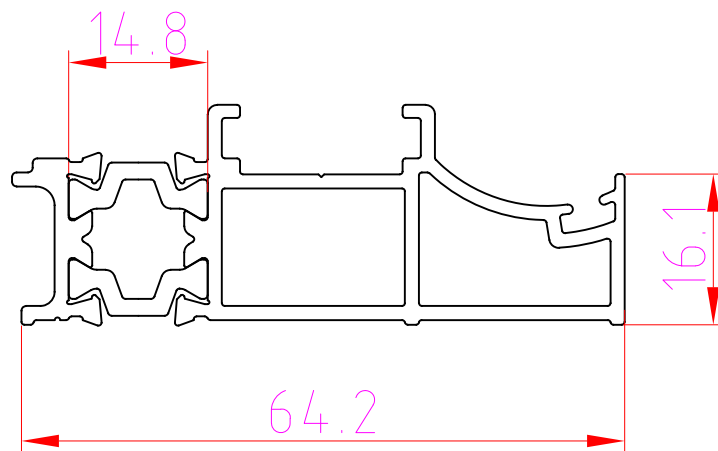


BOM Code	KSBG-6803
BOM Name	Glass panels
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

INSIDE

Tested Sample complies with this
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Initials: JS

All extrusions are 1.9 thick unless otherwise noted

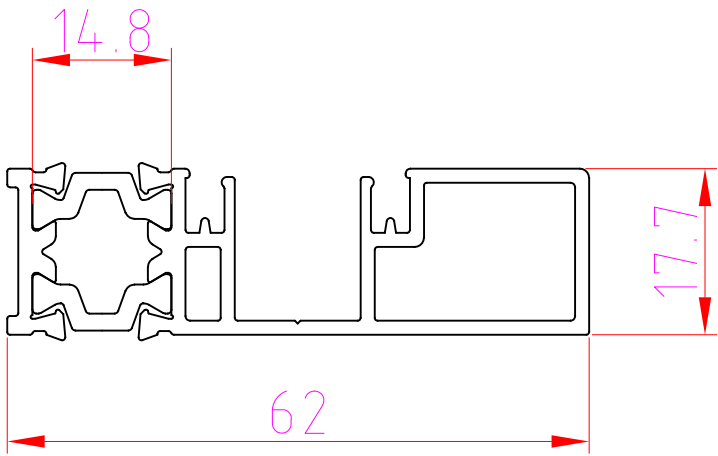


BOM Code	KSBG-6843
BOM Name	transfer framework-1
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

INSIDE

Tested Sample complies with this
detail except where noted
Laboratory Number: MED-1225c
Date: 1/10/2026
Initials: JS

All extrusions are 1.9 thick unless otherwise noted

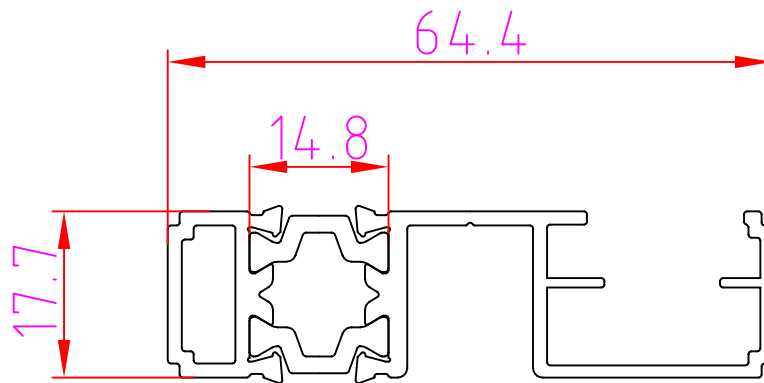


BOM Code	KSBG-6819
BOM Name	transfer framework-2
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

INSIDE

Tested Sample complies with this
detail except where noted
Laboratory Number: MED-1225c
Date: 1/10/2026
Initials: JS

All extrusions are 1.9 thick unless otherwise noted

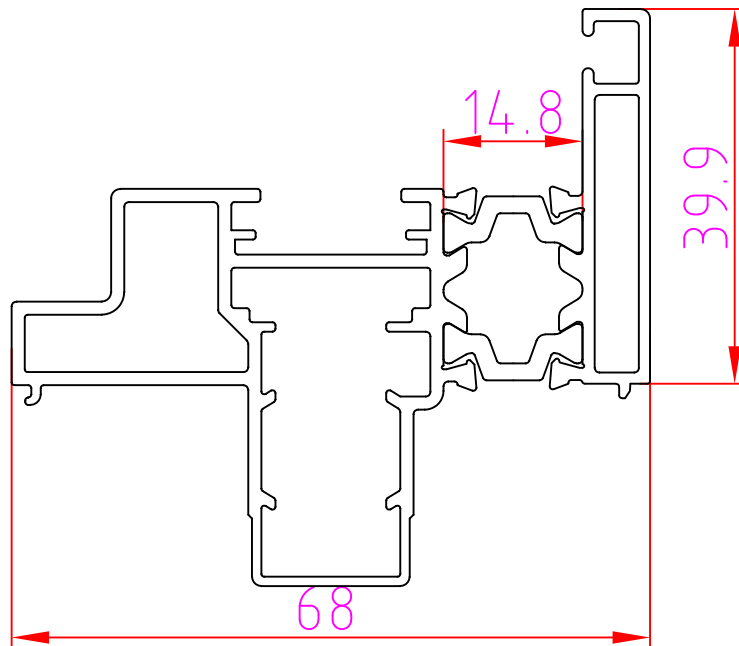


BOM Code	KSBG-6809
BOM Name	transfer framework-3
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

INSIDE

Tested Sample complies with this
detail except where noted
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Date: 1/10/2026
Initials: JS

All extrusions are 1.9 thick unless otherwise noted

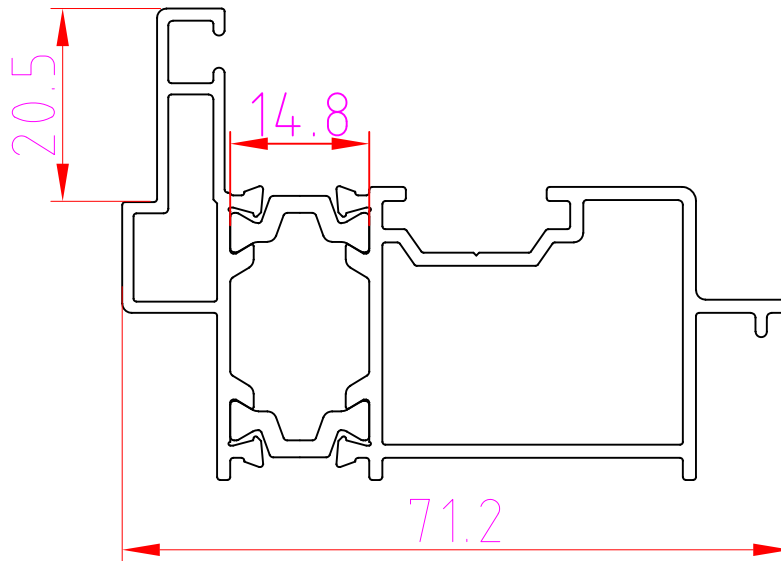


BOM Code	KSBG-6811
BOM Name	Sash Stop
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

INSIDE

Tested Sample complies with this
detail except where noted
Laboratory Number: MED-1225c
Date: 1/10/2026
Initials: JS

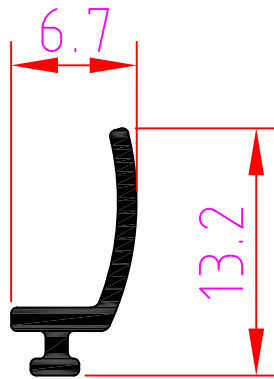
All extrusions are 1.9 thick unless otherwise noted



BOM Code	KSBG-6813
BOM Name	Door stop
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

INSIDE

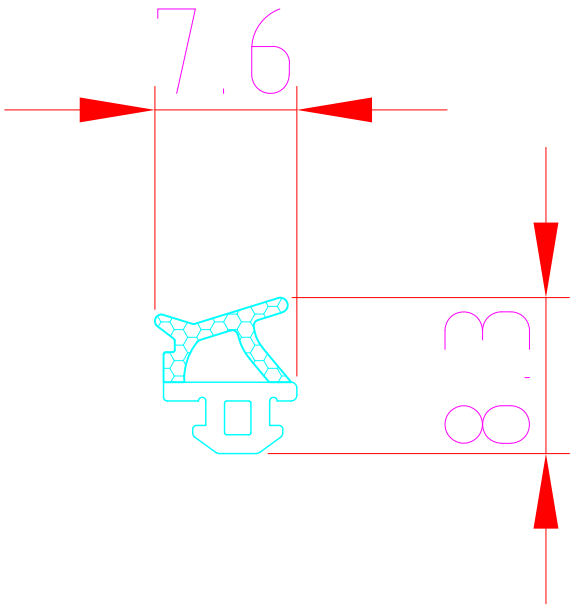
Tested Sample complies with this
detail except where noted
Laboratory Number: MED-1225c
Date: 1/10/2026
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BOM Code	EPDM-01
BOM Name	Slab frame rubber seal-2
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

INSIDE

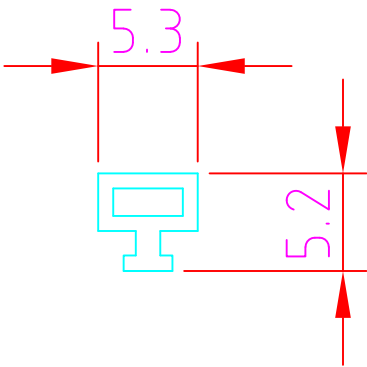
Tested Sample complies with this
detail except where noted
Laboratory Number: MED-1225c
Date: 1/10/2026
Initials: JS



BOM Code	EPDM-02
BOM Name	Outer frame rubber seal-1
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

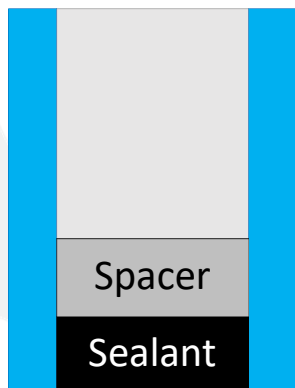
INSIDE

Tested Sample complies with this
detail except where noted
Laboratory Number: MED-1225c
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Initials: JS



BOM Code	EPDM-03
BOM Name	Outer frame rubber seal-3
比 例	----- 2025 ----- DOORS & WINDOWS SYSTEM SOLUTION SUPPLIER
1 : 1	

Please use the information below when modeling Quanex Super Spacer® for thermal performance.



Modeling Steps (THERM):

1. Sum the sealant depth and the appropriate spacer height;
2. Import a glazing system with the **Spacer Height** set to the sum from step 1;
3. Use the **Rectangle** tool to draw the sealant box:
 - a. Box bottom should be flush with the lower glass edge;
 - b. Box height is according to the actual sealant depth;
4. Use the **Fill Void** tool to create the spacer box; make sure to select the proper material.

Spacer Type	Spacer Height	Material Name in NFRC 101	Listed K _{EFF}
Standard	3/16" [4.8 mm]	Super Spacer Standard (EPDM)	0.179 W/m·K
Premium	3/16" [4.8 mm]	Super Spacer S2 Premium	0.125 W/m·K
Premium Plus	1/4" [6.4 mm]	Super Spacer S2 Premium Plus	0.127 W/m·K
Triseal	0.287" [7.3 mm]	Super Spacer Triseal / T-Spacer	0.141 W/m·K
T-Spacer	0.287" [7.3 mm]	Super Spacer Triseal / T-Spacer	0.141 W/m·K

Notes:

1. All Super Spacers are modeled using the 2-box method, using effective conductivity (K_{EFF}) values for the spacers, and the appropriate conductivity for the sealant. This includes the various T-spacers: the PIB is not drawn separately.
2. Listed K_{EFF} values are taken from NFRC 101, but may not be current. If there is a disparity between the values above and those in NFRC 101, use the NFRC values.
3. By default, Super Spacer is sized in 1/16" increments, but some non-standard sizes are available. Always verify actual size with the IG manufacturer before modeling.
4. Default sealant depths¹ for the rectangular (i.e. not T-spacer/Triseal) spacers are:
 - a. 3/16" for hot melt butyl, a.k.a. "Butyl rubber (isobutene, solid/hot melt)";
 - b. 1/4" for other organic sealants (silicone is not used with rectangular spacers);
 - c. Always verify actual sealant depth with the IG manufacturer before modeling;
5. Default sealant for the T-spacer and Triseal products is 1/4" silicone.¹ However, both the material and depth can vary according to the requirements of individual projects, so always verify both with the IG manufacturer before modeling.

¹ Note that default sealant specifications are for thermal modeling only; they are not recommendations for IG manufacture. For more information, see Quanex technical bulletin RDQ0024: *Secondary Sealant use with Super Spacer Systems*.

For questions regarding this document, please contact:

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douglas.hauck@quanex.com

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