QAI LABORATORIES
CERTIFICATION TESTING INSPECTION

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CLIENT: **Miracle Distribution Inc.**
#106, 2451 W. Grapevine Mills Cir.
Grapevine, TX 76051

Project No: MED-1245c	Report Date: May 7, 2024

SAMPLE ID: Series: Fixed Window

SAMPLE DESCRIPTION: Width: 1200 mm; Height: 1500 mm; See page 2 for full description.

SAMPLING DETAIL: The test sample manufactured by **Miracle Distribution Inc.** was submitted directly to QAI by the client. Samples were not independently selected for testing.

DATE OF RECEIPT: Samples were received at the QAI Miami Laboratory on March 8, 2024

TESTING PERIOD: April 18, 2024

EXPIRATION DATE: April 18, 2029

TESTING LOCATION: QAI Laboratories (FTL) – Miami, Florida, USA

AUTHORIZATION: Proposal Number 23MT05063R5, signed by John Hyuk Lee, dated December 6, 2023

TEST PROCEDURE: Testing to the following requirements:

- NFRC 102-2020 Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems

TEST RESULTS: The Fixed Window achieved the results found on pages 3-4 of this test report when tested in accordance with the NFRC 102.

CONTENTS: Test report pages 1 through 6.

Prepared by

Monika Sanchez

Monika Sanchez

Signed for and on behalf of
QAI Laboratories

Jose Sanchez

Jose Sanchez
Person-in-Responsible-Charge

PRODUCT DESCRIPTION

Model Designation:	Fixed Window
Operating Type:	FIXD
Overall Size:	1200mm (47 1/4") by 1500mm (59") high
NFRC Standard Size:	1200mm (47 1/4") by 1500mm (59") high

Frame Construction	
Frame Construction, Material, Color and Finish:	(VY) vinyl members with miter welded joints

Glazing Description	
Layer 1:	3/16" clear Low E **(Solarban 70XLEN2plus on surface #2 e=0.018)
Gap:	1/2" gap using a Technoform spacer
Layer 2:	3/16" clear

***as per manufacture*

Glazing Method	
Interior Condition:	Silicone
Exterior Condition:	Vinyl glazing bead

Argon	Single Probe	**90%

***as per manufacture*

Daylight Opening
44 3/8 x 56 1/8 high

Weather Stripping		
Quantity	**Description**	**Location**
None	None	None

Hardware		
Quantity	**Description**	**Location**
None	None	None

Weep Holes		
Quantity	**Description**	**Location**
None	None	None

Reinforcement	
Material	**Location**
None	None

Dividers/Grids		
Grid Size	**Material**	**Grid Pattern**
None	None	None

Measured Test Data

Heat Flows

1.	Total Measured Input into Metering Box (Qtotal)	700.24 Btu/hr
2.	Surround Panel Heat Flow (Qsp)	305.85 Btu/hr
3.	Surround Panel Thickness	4.0 inches
4.	Surround Panel Conductance	0.06 Btu/hr·ft²·F
5.	Metering Box Wall Heat Flow (Qmb) and Flanking Heat Flow (Qfl)	-3.68 Btu/hr
6.	EMF vs Heat Flow Equation (equivalent information)	y=-7.34x+35.29
7.	Net Specimen Heat Loss (Qs)	398.06 Btu/hr

Areas

1.	Test Specimen Projected Area (As)	19.36 ft²
2.	Specimen, Projected Frame Area (A_f)	2.06 ft²
3.	Specimen, Projected Glazing Area (A_g)	17.29 ft²
4.	Test Specimen Interior Total (3-D) Surface Area (Aint)	20.25 ft²
5.	Test Specimen Exterior Total (3-D) Surface Area (Aext)	19.88 ft²
6.	Metering Box Opening Area (Amb)	103.78 ft²
7.	Metering Box Baffle Area (Ab1)	92.91 ft²
8.	Surround Panel Interior Exposed Area (Asp)	84.42 ft²

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	11.6 %
5.	Measured Cold Side Wind Velocity (Perpendicular Flow)	12.1mph
6.	Measured Static Pressure Difference Across Test Specimen	0.0 psf

Surface Temperature Data

1.	Warm side surround panel	66.25 F
2.	Cold side surround panel	0.68 F

Results

1.	Thermal Transmittance of Test Specimen (Us)	0.29 Btu/hr·ft²·F
2.	Standardized Thermal Transmittance of Test Specimen (Ust)	0.29 Btu/hr·ft²·F

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)	0.90
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 (eb1)	0.92
7.	Equivalent Warm Side Surface Temperature	54.97 F
8.	Equivalent Cold Side Surface Temperature	4.11 F
9.	Warm Side Baffle Surface Temperature	69.07 F
10.	Measured Warm Side Surface Conductance (hh)	1.39 Btu/hr·ft²·F
11.	Measured Cold Side Surface Conductance (hc)	4.86 Btu/hr·ft²·F
12.	Test Specimen Thermal Conductance (Cs)	0.40 Btu/hr·ft²·F
13.	Convection Coefficient(Kc)	0.32 Btu/(hr·ft²·$F^{1.25}$)
14.	Radiative Test Specimen (Qr1)	217.23 Btu/hr
15.	Conductive Test Specimen Heat Flow (Qc1)	181.09 Btu/hr
16.	Radiative Heat Flux of Test Specimen (qr1)	11.22 Btu/hr·ft²·F
17.	Convective Heat Flux of Test Specimen (qc1)	9.35 Btu/hr·ft²·F
18.	Standardized Warm Side Surface Conductance (hsth)	1.25 Btu/hr·ft²·F
19.	Standardized Cold Side Surface Conductance (hstc)	5.28 Btu/hr·ft²·F
20.	Standardized Thermal Transmittance (Ust)	0.29 Btu/hr·ft²·F

Test Duration

1. The environmental systems were started at 11:04 hours, on 4/17/2024.
2. The test parameters were considered stable for two consecutive four hour test periods from 00:04 hours, on 4/17/2024 to 08:04 hours, on 4/17/2024.
3. The thermal performance test results were derived from 04:04 hours, on 4/17/2024 to 08:04 hours, on 4/17/2024.

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

Glazing Deflection (in.)	Fixed Lite
Gap width upon receipt of sample in laboratory	0.505
Gap width at laboratory ambient condition on day of testing	0.505
Center of gap at conclusion of test	0.510

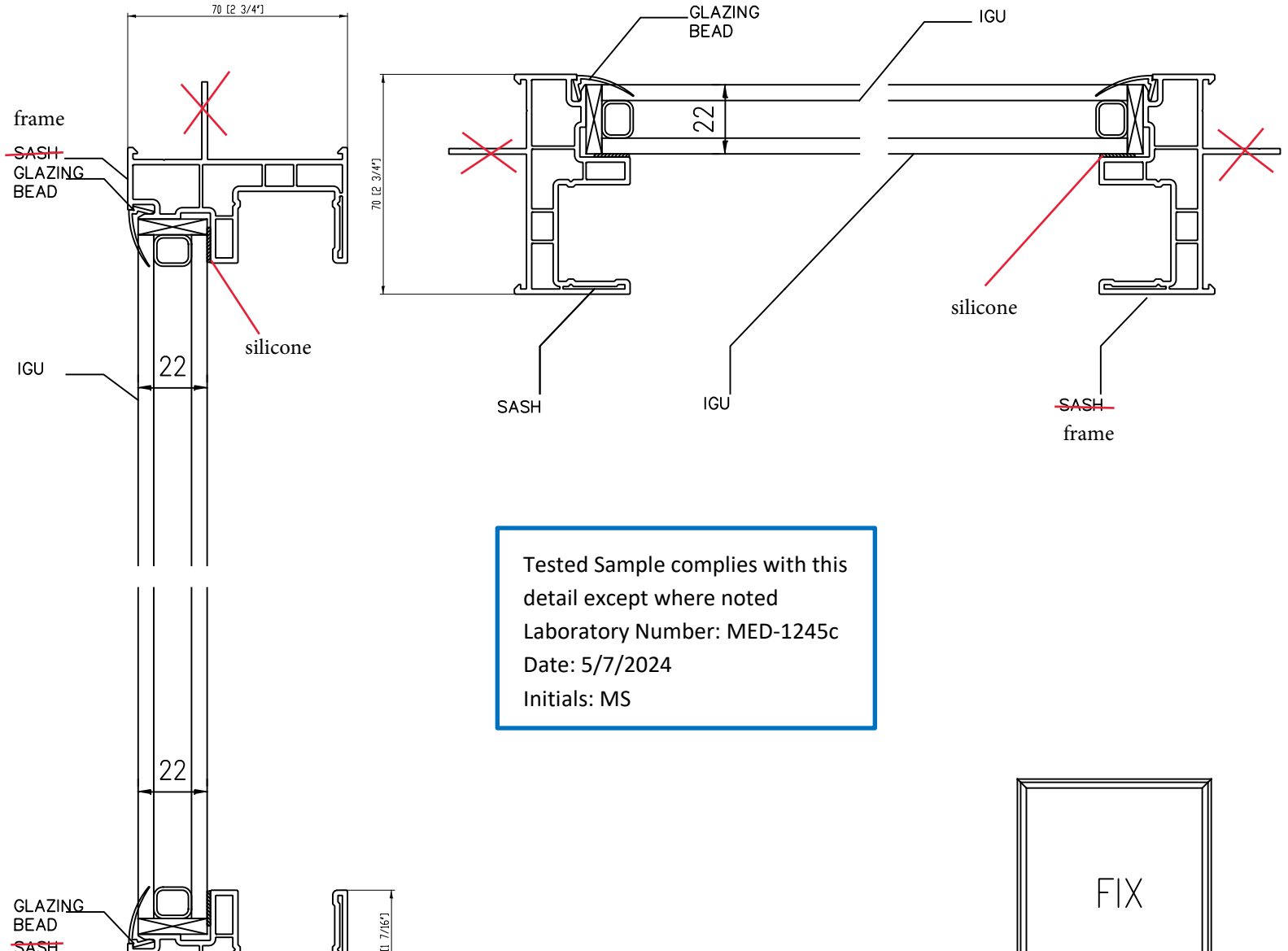
Remarks
The sample was inspected for the formation of frost or condensation, which may influence the surface temperature measurements. The sample showed no evidence of condensation/frost at the conclusion of the test. The calibration of QAI Laboratory's "thermal test chamber" was conducted December 2023. "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 laboratory. 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:
5/7/2024: Initial report release

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

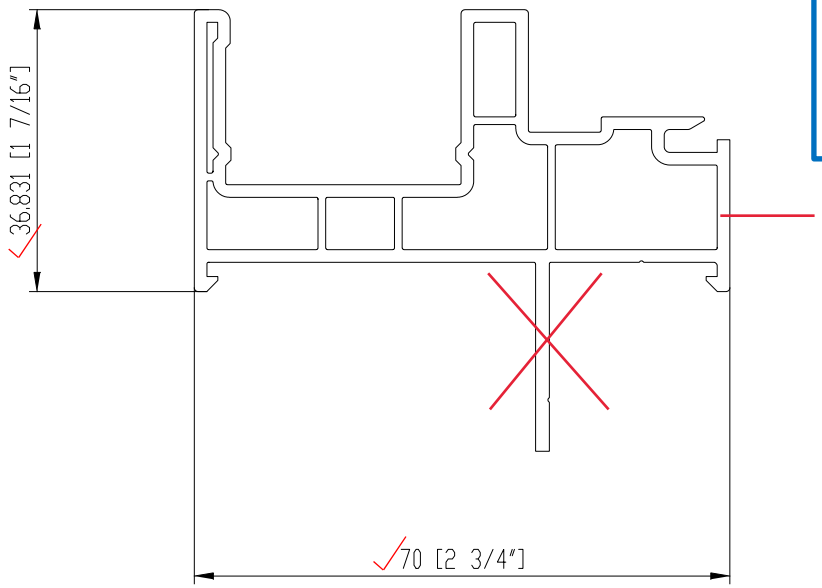
APPENDIX

Fenestration Product Drawings and Bill of Material



Tested Sample complies with this detail except where noted
Laboratory Number: MED-1245c
Date: 5/7/2024
Initials: MS

??	PSH-040??	? ? ?



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Laboratory Number: MED-1245c
Date: 5/7/2024
Initials: MS

Rigid vinyl

? ? ?	?????		? ? ?
? ?	? ?	? ?	
P.J.Y	23.03.10		
S.M: PRECISION		?? ?? H/S	? ? 3/1

??	PSH-040??	? ? ?

Tested Sample complies with this detail except where noted
Laboratory Number: MED-1245c
Date: 5/7/2024
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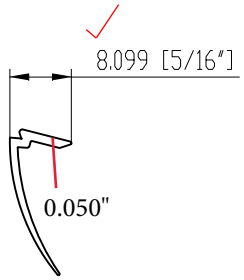

Rigid vinyl

? ? ?	?????		? ? ?
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P.J.Y	23.03.10		
S.M: PRECISION		?? ?? H/S	? ? 3/1

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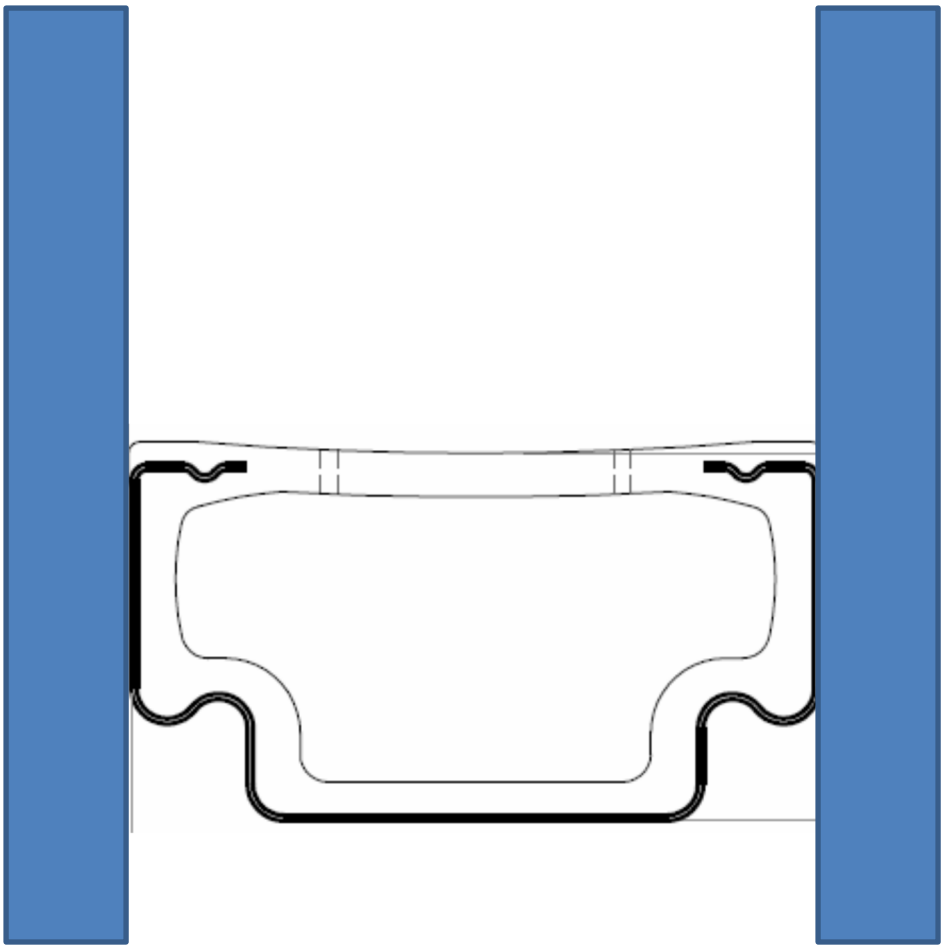

Primary Sealant: PIB 0.004" by 0.140" high
Secondary Sealant: Silicone
Spacer Material: Stainless Steel “Oxidized” and Polypropylene
Desiccant: Loose Fill Silica Gel

Tested Sample complies with this detail except where noted
Laboratory Number: MED-1245c
Date: 5/7/2024
Initials: MS