



CLIENT: Siber Facade Group

230-7270 Market Crossing Burnaby, British Columbia

V5J 0A2 Canada

Test Report No: BUR0125-DW-c Issue Date: January 23, 2024

SAMPLE ID: Siber Facade Group Alpine HD Aluminum Fixed Window.

SAMPLE DESCRIPTION: Width: 1500 mm; Height: 2000 mm. See page 6 for full description.

SAMPLING DETAIL: Test sample from Siber Facade Group was submitted directly to QAI.

DATE OF RECEIPT: Test sample was received on November 8, 2023.

TESTING PERIOD: Testing was conducted November 9, 2023 – January 23, 2024.

TESTING LOCATION: QAI Laboratories Ltd., Burnaby, BC, Canada.

AUTHORIZATION: Proposal #23MT07263, signed by Andrew Pushka dated July 26, 2023.

TEST PROCEDURE: Testing was performed following the methods and requirements outlined in the

following standards:

AAMA/WDMA/CSA 101/I.S.2/A440-22 NAFS – North American Fenestration

Standard/Specification for windows, doors, and skylights.

CSA A440S1-19 - Canadian Supplement to NAFS 2017.

TEST RESULTS: Alpine HD Aluminum Fixed Window

Class CW - PG100: Size tested 1500 x 2000 mm (~59 x 79 in) - Type FW

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Detailed test results and product ratings are available on pages 4-5.

CONTENTS: Test Report pages 1 through 19.

Signed for and on behalf of QAI Laboratories, Ltd

Robbio Manuel

Robbie Manuel

Neil Dumont

Project Manager Fenestration Reviewer



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TEST CONDITIONS:

AAMA/WDMA/CSA 101/I.S.2/A440-22 NAFS and CSA A440S1-19

QAI Laboratories Ltd. (QAI) was retained by Siber Facade Group to perform testing in accordance with the mandatory test requirements of AAMA/WDMA/CSA 101/I.S.2/A440-22 NAFS and CSA A440S1-19 on a representative sample of a 1500 mm x 2000 mm Alpine HD Aluminum Fixed Window.

This report includes tests performed on a specimen of specific dimensions. Actual product performance may be affected by variations in the windows dimensions, assembly details and installation method. The drawings supplied by the client were verified by QAI for the window unit tested and are shown in Appendix A.

Installed by: Siber Facade Group Installation details:

- Three aluminum L-angles are inserted into the outermost T-slot of the exterior aluminum frame component. A
 1300 mm length is used along the head and an 1800 mm length is used along each jamb.
- The L-angles are fastened to the test buck with #10 x 2" self-tapping panhead screws through pre-punched holes spaced 155 mm apart along the head and 174 mm apart along each jamb.
- Four lengths of 1/4" foam backing rod were used around the perimeter of the window frame.
- Silicone was applied between the window frame and test buck on the interior side.

Wooden test buck details:

- Inner frame: nominal 2" x 6" stud framing.
- Outer frame: nominal 2" x 12" stud framing.
- Rough opening: The rough opening is 1" larger in width and 1/4" larger in height than the test specimen.
- Shims: None used.



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PRODUCT RATINGS:

Table 1: Summary of Test Results

Test Name	AAMA/WDMA/CSA 101/I.S.2/A440-22 NAFS and CSA A440S1-19 Results:
Air Leakage	Test pressure = 75 Pa
(ASTM E283)	Infiltration = $0.121 \text{ L/s/m}^2 (0.024 \text{ cfm/ft}^2)$
	Exfiltration = $0.131 \text{ L/s/m}^2 (0.026 \text{ cfm/ft}^2)$
	Overall result – Pass CW class requirements
	Test pressure = 300 Pa
	Infiltration = $0.113 \text{ L/s/m}^2 (0.022 \text{ cfm/ft}^2)$
	Exfiltration = $0.274 \text{ L/s/m}^2 (0.054 \text{ cfm/ft}^2)$
	Reported only
Water Penetration (ASTM E547)	Maximum pressure differential = 720 Pa (DP 100 – 15.04 psf) ¹
Uniform Load Deflection	Design Pressure = 4800 Pa (DP 100)
(ASTM E330 – Procedure A)	Maximum pressure differential = 5760 Pa (120.30 psf)
	L/175 Deflection limit for CW class = 11.2 mm (0.442")
	Deflection at pressure = 4.0 mm (0.159")
	Deflection measured along the left jamb looking from the interior.
Uniform Load Structural	Design pressure = 4800 Pa (DP 100)
(ASTM E330 – Procedure A)	Maximum pressure differential = 7200 Pa (150.38 psf)
Forced Entry Resistance Test (ASTM F588-17)	Grade 10 – Pass

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¹ The window frame was sealed to the test buck along the entire perimeter on the interior side and was not evaluated for water penetration at the frame corner joints and their fastening screws.



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Table 2. Product Classification

Alpine HD Aluminum Fixed Window				
Maximum Size Tested:	1500 mm wide x 2000 mm tall (~59 x 79 in)			
Performance Classification:	CW			
Performance Grade:	PG100			
Product Type:	FW			
Primary Designator: Class CW - PG100: Size tested 1500 x 2000 mm (~59 x 79 in) – Type FW				
Secondary Designator:				
Positive ASD Design Pressure (DP) = 4800 Pa (100.25 psf)				
Negative ASD Design Pressure (DP) = -4800 Pa (-100.25 psf)				
Water Penetration Resistance Test Pressure = 720 Pa (15.04 psf)				
Air Infiltration / Exfiltration = Pass				

Notes:

- AAMA/WDMA/CSA 101/I.S.2/A440-22 NAFS, Clause 8.2.4: The air, water, and structural tests required by this Standard/Specification are performed on test specimens installed in a fixture that permits installation in accordance with the manufacturer's documented instructions. These tests are used to evaluate the performance of the fenestration product only and are not intended to test the performance of the installation, particularly the perimeter sealants between the fixture and the test specimen and the anchoring of the test assembly to the test fixture.
- Products not installed according to the installation method described in this report may not perform to an equivalent performance level.



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Table 3. Product Description

Alpine HD	Aluminum Fixed	Window
Frame:	Description:	Thermally broken insulated aluminum frame profile. Frame dimensions: Width: 1500 mm; Height: 2000 mm.
	Joints:	Mitre cut and sealed with silicone at the joining faces.
		Two aluminum corner keys per corner joint. One corner key inserted into both the interior and exterior aluminum frame components and sealed in place with silicone.
	Insulation:	Rigid insulation used in the thermal break cavity and on the rough opening side of the thermal break.
Glazing Method:	Interior Seal: (Glazing Bead	Aluminum glazing bead profile. Four strips of glazing bead used around the window perimeter; butt joined at corners.
	and Gasket)	Four lengths of rubber glazing gasket (Gasket Code 200 162) inserted between the glazing bead and IGU; butt joined at corners.
	Glazing Foam Insulation:	Four lengths of glazing foam insulation around the perimeter of the window frame inserted between the frame and IGU.
	Heel Bead:	A silicone heel bead was applied on the interior side of the IGU, extending the entire length up each jamb.
	Exterior Seal: (Glazing Gasket)	Four lengths of rubber glazing gasket (Gasket Code 200 158) inserted between the exterior aluminum frame component and IGU; butt joined and sealed with silicone at corners.
	Setting Blocks:	Three 3-1/2" x 1" x 1/4" plastic setting blocks were used.
		Sill: One setting block each centered 2" from the inside face of either jamb.
		Left jamb, looking from the interior: One setting block centered 4" from the inside face of the head.
Glazing:	Description:	Three tempered glass panes with a thickness of 6 mm each. Overall IGU thickness: 42 mm.
Drainage:	Frame:	Into the frame: Three 1/2" x 1/4" drainage slots machined into the sill, centered 8", 29-1/2" and 51" from the often of the left jamb, looking from the interior.
		Out of the frame: Seven 1/2" x 1/4" drainage slots machined out of the sill and spaced 8" apart.

CONCLUSION / FINDINGS:

QAI Laboratories Ltd. has performed testing in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-22 NAFS and CSA A440S1-19 requirements, on a representative sample of a Siber Facade Group. Alpine HD Aluminum Fixed Window. Testing was performed at the Burnaby, BC location.

Test results in this report may not be reproducible in the field. Test results relate only to those products tested.

See Table 1 for a summary of test results and window ratings. The sample tested was found to comply with the applicable requirements and obtained test results as reported in Table 1 of this report.



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APPENDIX A

(Drawings and photographs specifications)

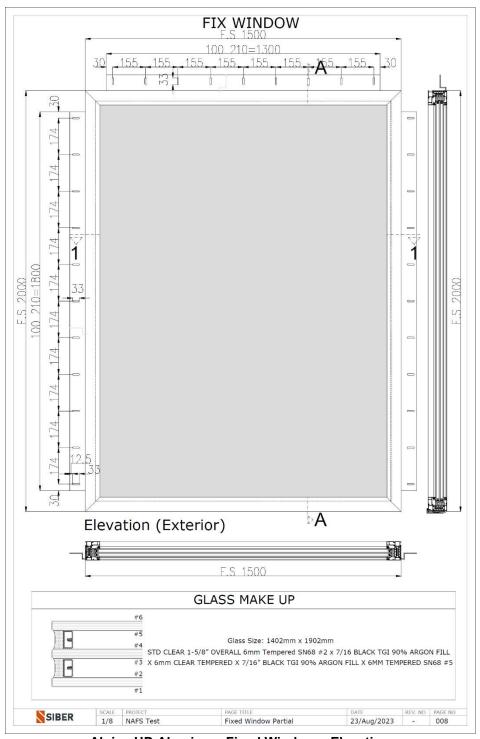
Page	Title
8	Elevation Drawing
9-11	Cross-Section Assembly Drawings
12-15	Dimensioned Die/Profile Drawings
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Elevation Drawing

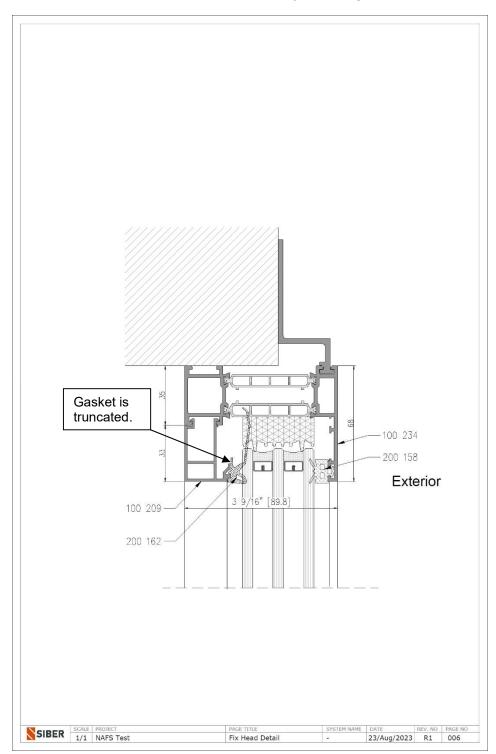
Dimensions are in mm.



Alpine HD Aluminum Fixed Window – Elevation

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Cross-Section Assembly Drawings

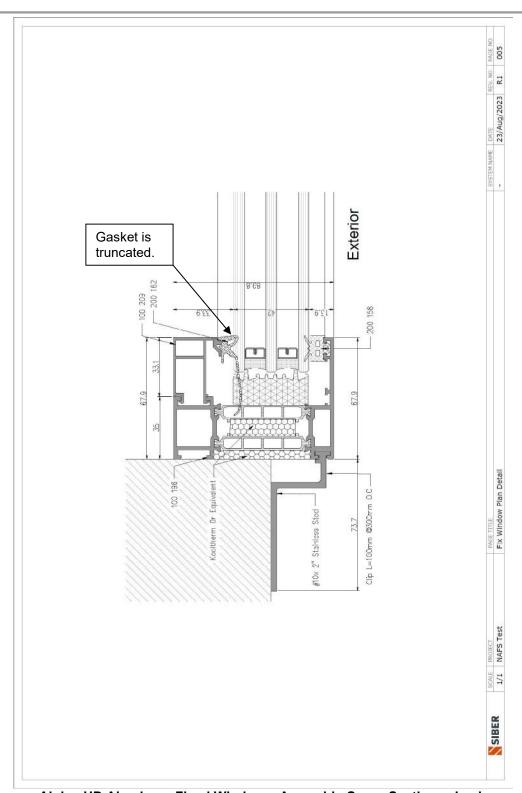


Alpine HD Aluminum Fixed Window – Assembly Cross-Section – Head



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Dimensions are in mm.

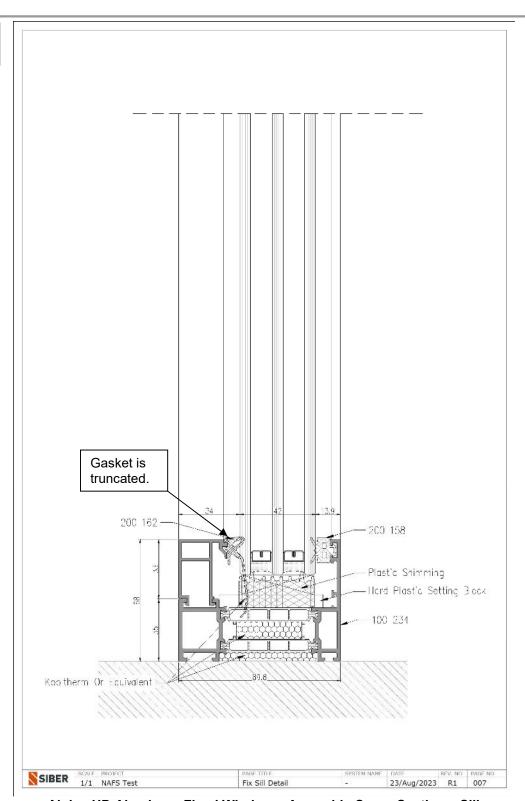


Alpine HD Aluminum Fixed Window – Assembly Cross-Section – Jamb



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Dimensions are in mm.



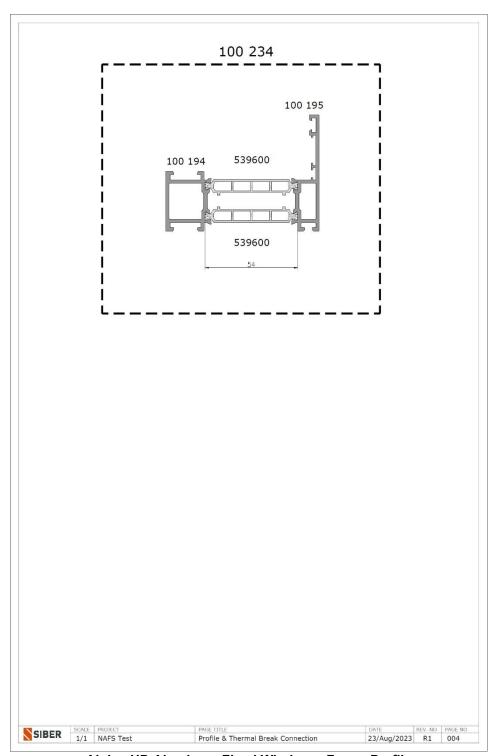
Alpine HD Aluminum Fixed Window – Assembly Cross-Section – Sill



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Dimensioned Die Drawings

Dimensions are in mm.

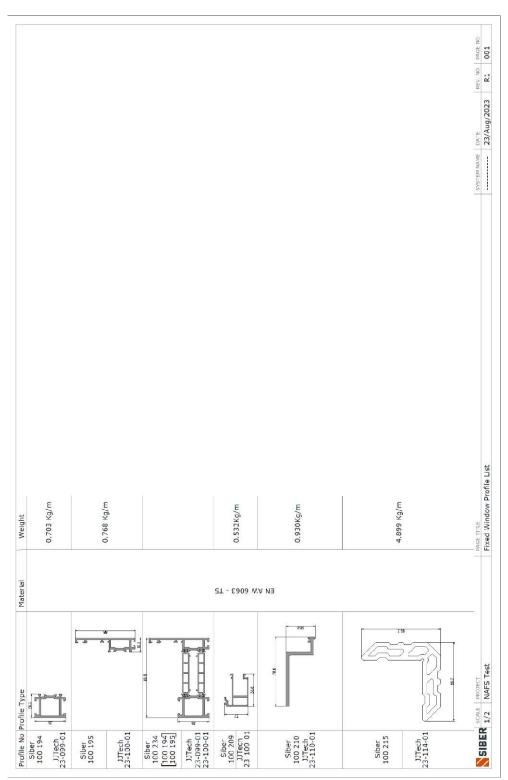


Alpine HD Aluminum Fixed Window – Frame Profile



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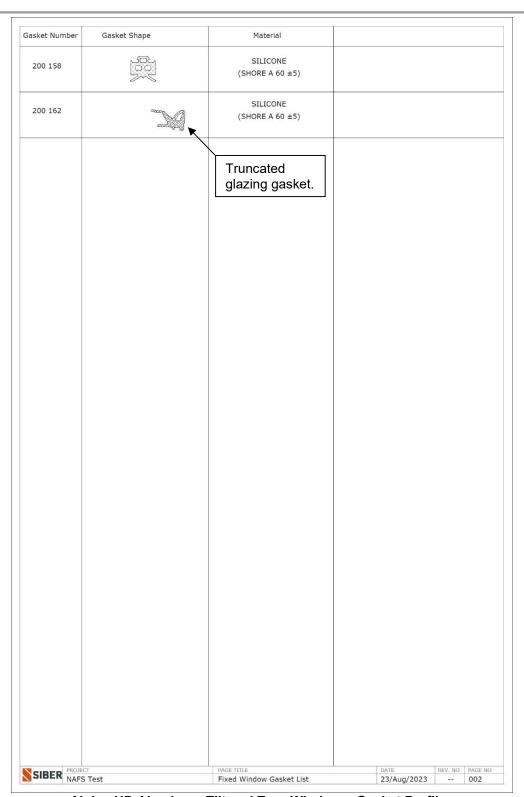
Dimensions are in mm.



Alpine HD Aluminum Fixed Window - Aluminum Component Profiles



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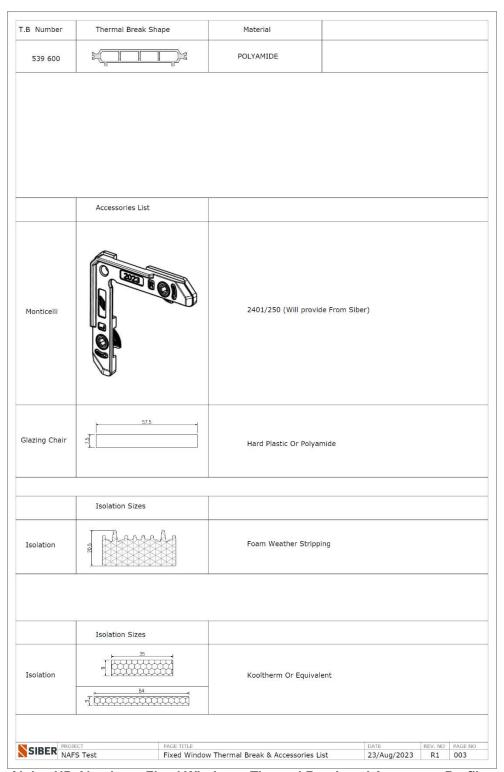


Alpine HD Aluminum Tilt and Turn Window - Gasket Profiles



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Dimensions are in mm.



Alpine HD Aluminum Fixed Window - Thermal Break and Accessory Profiles



Sample Photographs

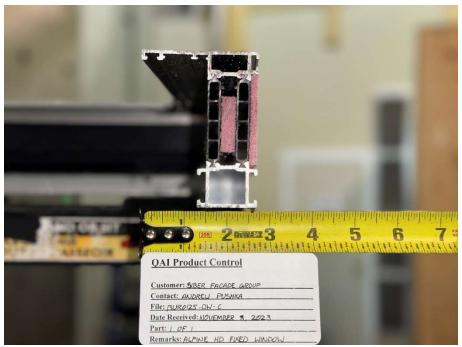


Figure 1: Frame.



Figure 2: Glazing bead.



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Figure 3: Glazing gaskets.



Figure 4: Silicone heel bead, glazing foam insulation, and exterior glazing gasket corner joint.



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Figure 5: Drainage into the frame.



Figure 6: Drainage out of the frame.



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REPORT REVISION HISTORY

Date	Revision	Change Description	Initials
January 23, 2024	0	Original Report: Siber Facade Group. Alpine HD Aluminum Fixed Window	RM

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