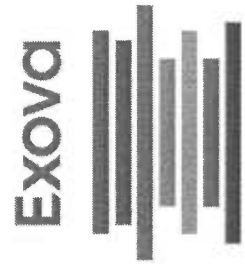


Exova
2395 Speakman Dr.
Mississauga
Ontario
Canada
L5K 1B3

T: +1 (905) 822-4111
F: +1 (905) 823-1446
E: sales@exova.com
W: www.exova.com



Testing. Advising. Assuring.

**PERFORMANCE EVALUATION OF THE WINDSPEC INC.,
"WINDSPEC 5400 SERIES FIXED" WINDOW UNIT
IN ACCORDANCE WITH NAFS - AMMA/WDMA/CSA 101/I.S.2/A440-08**

Report to:	Windspec Inc. 1310 Creditstone Road Concord, Ontario L4K 5T7
Attention:	Mr. Oren Anava
Telephone:	(905) 738-8311
Email:	oren@windspec.com
Report No.:	12-06-M0547-7P 5 Pages, 1 Appendix
Proposal No.:	12-006-09659
Date:	February 17, 2013

1.0 INTRODUCTION

At the request of Windspec Inc., Exova was retained to conduct the performance evaluation of a fixed aluminum window identified as the "Windspec 5400 Series Fixed" window unit, in accordance with NAFS - AAMA/WDMA/CSA 101/I.S.2/A440-08 Windows Standard as outlined in proposal number 12-006-09659.

Exova Specimen No.:	12-06-M0547-7P
Type:	Aluminium Fixed Window
Model:	Windspec 5400 Series Fixed
Overall Window Size:	1,500 mm (wide) x 2,500 mm (high)
Glazing Engagement:	14 mm
Glazing:	6 mm / 13 mm air space / 6 mm Clear IGMAC No.: N/A
Glazing Type:	Edgetech Superspacer, 13 mm Overall Spacer Width, Overall Spacer Height: 11 mm
Weatherstripping:	EPDM Seals - 2 / IGU
Thermal Break:	EPDM / Rigid PVC
Number of Setting Blocks:	N/A

Note: Details and drawings as provided by the manufacturer for the above unit have been included in Appendix A.

2.0 PROCEDURE

The Building Performance Centre at Exova Mississauga evaluated the above window in accordance with the procedures of the NAFS - AAMA/WDMA/CSA 101/I.S.2/A440-08 Window test standard. The following specific test program was conducted:

- | | |
|--------------------------------|---------------|
| • Air Leakage Resistance | Section 5.3.2 |
| • Water Penetration Resistance | Section 5.3.3 |
| • Uniform Load Tests | Section 5.3.4 |
| • Forced Entry Resistance Test | Section 5.3.5 |

3.0 RESULTS

Table 1- Summarized Testing Results in Accordance with NAFS - AAMA/WDMA/CSA 101/I.S.2/A440-08 Exova Specimen No.: 12-06-M0547-7P			
Test	Requirements	Test Results	Rating
Air Leakage Resistance* (Clause: 5.3.2) Test Date: January 31, 2013	Maximum Allowable Air Leakage: 0.5 L/s m ² @ 300 Pa (For Fixed Products) Canadian Air Infiltration / Exfiltration Levels (AW-Class): A2 Level: < 0.5 L/s m ² A3 Level: < 0.5 L/s m ² Fixed Level: < 0.2 L/s m ²	Infiltration Q = 0.04 L/s m ² Exfiltration Q = 0.06 L/s m ² Average Q = 0.05 L/s m ² @ 300 Pa Unit Area = 3.83 m ²	Meets Gateway: FW-AW Canadian Level: Fixed
Water Penetration Resistance (Clause 5.3.3) Test Date: January 31, 2013	Gateway Performance Requirements for FW-AW40: Pressure: 390 Pa Optional Performance Requirements for FW-AW100 (US / CAN): Pressure: 730 Pa Requirement: No water leakage or penetration at specified pressure differential	No water penetration occurred at pressure differential of 390 Pa. Meets FW-AW40 Class for Water Penetration Resistance No water penetration occurred at pressure differential of 730 Pa. Meets FW-AW100 Class for Water Penetration Resistance	Meets Gateway: FW-AW40 Highest Class Achieved: FW-AW100 (US / CAN)

Table 1 (Continued) - Summarized Testing Results in Accordance with NAFS - AAMA/WDMA/CSA 101/I.S.2/A440-08 Exova Specimen No.: 12-06-M0547-7P			
Test	Requirements	Test Results	Rating
Uniform Load Deflection Test at Design Pressure (Clause 5.3.4.2) Test Date: January 31, 2013	Gateway Performance Design Pressure for FW-AW40: +/- 1,920 Pa Requirements: - No permanent damage - Report L/175 Net Deflection Results - Report and Residual Deflection Optional Performance Requirements for FW-AW70 (US / CAN): +/- 3,360 Pa	Frame Length (L) = 2,500 mm Allowable (L/175) = 14.3mm Net Deflection at Design Pressure: + 3,360 Pa = 0.7 mm - 3,360 Pa = -2.6 mm Residual Deflection: + 3,360 Pa = 1.0 mm -3,360 Pa = -1.7 mm - No Permanent Damage Observed - Window Meets L/175 deflection requirement	Meets Gateway: FW-AW40 Highest Class Achieved: FW-AW70 (US / CAN)
Uniform Load Structural Test at 150% Design Pressure (Clause 5.3.4.2) Test Date: January 31, 2013	Gateway Performance Structural Pressure for FW-AW40: +/- 2,880 Pa Requirements: - No permanent damage - Report Residual Sash Deflection - Frame Length = 2,500 mm - Allowable residual = 0.3% of Sash Length Optional Performance Requirements for FW-AW70 (US / CAN): +/- 5,040 Pa	Allowable residual = 7.5 mm Residual Deflection: + 5,040 Pa = 0.1 mm (0.004%) - 5,040 Pa = -1.0 mm (0.040%) - No Permanent Damage Observed - Window Operates	Meets Gateway: FW-AW40 Highest Class Achieved: FW-AW70 (US / CAN)
Forced Entry Resistance Type D Window (Clause 5.3.5) Test Date: January 31, 2013	Initial Preparation : Remove all exterior screws, glazing retainers or other fasteners which can be removed using common tools , within a period of five (5) minutes	No Removable Exterior Fixtures	Grade 20

4.0 MODIFICATIONS

No modification was made to the Windspec Inc., "Windspec 5400 Series Fixed" window unit, Exova Specimen No.: 12-06-M0547-7P, during testing to achieve the results stated in this report.

5.0 CONCLUSIONS

Based on the results of the testing summarised in Table 1, Windspec Inc., "Windspec 5400 Series Fixed" Window Unit, Exova Specimen No.: 12-06-M0547-7P met the following requirements as outlined in the NAFS - AAMA/WDMA/CSA 101/I.S.2/A440-08 Window Standard:

Performance Rating

- | | |
|--------------------------------|------------------------------|
| • Air Leakage Resistance | FW-AW (Fixed Level Canadian) |
| • Water Penetration Resistance | FW-AW100 |
| • Uniform Load Tests | FW-AW70 |
| • Forced Entry Resistance Test | Grade 20 |

Product Designation

- Class AW-PG70 - 1,500 x 2,500mm (60 x 99")

Product Manufacturer:	Windspec Inc.
Product Type:	Fixed Window
Product series/model:	Windspec 5400 Series Fixed
Primary product designator:	Class AW-PG70 - 1,500 x 2,500mm (60 x 99")
Optional Secondary designator:	Air Leakage Resistance = Fixed Level Canadian
	Water Penetration Resistance = 730Pa (15.0 PSF)
	Negative Design Pressure (DP) = - 3,360 Pa (-70.0 PSF)
	Positive Design Pressure (DP) = + 3,360 Pa (+70.0 PSF)
	Test Completion Date: January 31, 2013

Reported by:

Reviewed & Authorized by:


Sunny Ling, Ext. 311
Lab Technologist, Systems Laboratory
Building Performance Centre

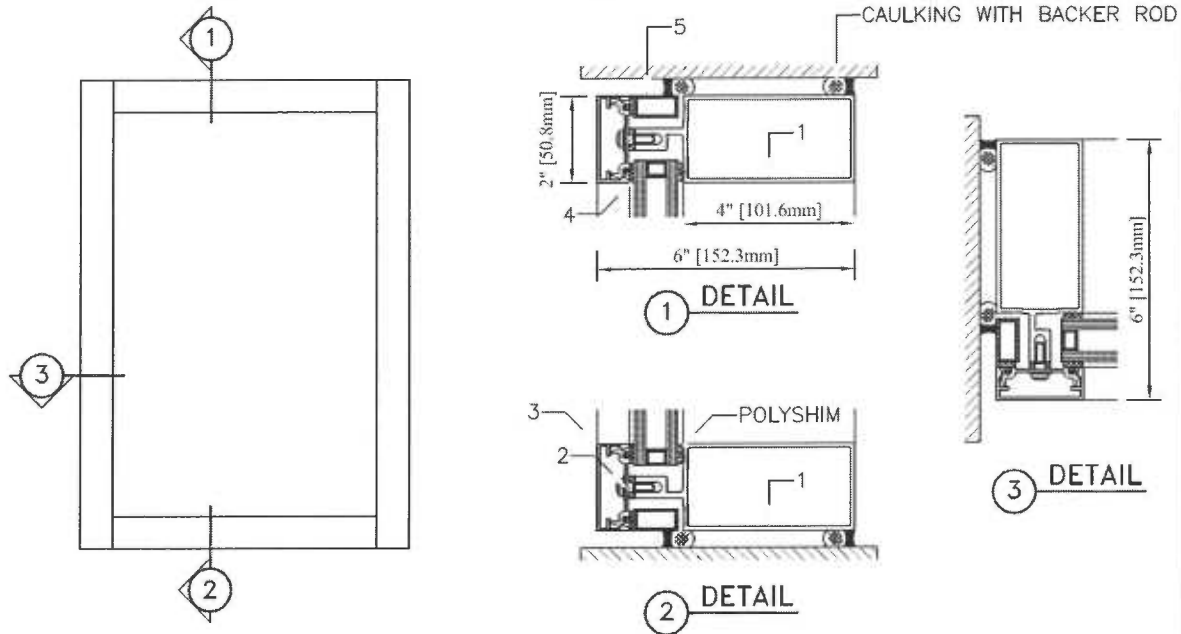

Jordan M. Church, 416-455-2831
Supervisor, Fenestration / Walls / Solar Thermal
Building Performance Centre

This report and service are covered under Exova Canada Inc.'s. Standard Terms and Conditions of Contract which may be found on our company's website www.exova.com, or by calling 1-866-263-9268

APPENDIX A

Manufacturer's Detail Drawings

(1 Page)



#	DIE #	DESCRIPTION
1	C-54002	MULLION
2	C-54006	PRESSURE PLATE
3	C-54004	SNAP-ON CAP
4	R-55003	PRESSURE PLATE GLAZING SPLINE
5	R-55001	P.V.C. POCKET FILLER
6	R-53001	P.V.C. THERMAL BARRIER

GENERAL NOTES

WINDOW: WINDSPEC 5400 SERIES FIXED WINDOW

GLAZING: 1" SEALED UNIT
EXTERIOR GLASS: 1/4" CLEAR TEMP
INTERIOR GLASS: 1/4" CLEAR TEMP



WINDSPEC INC.
MANUFACTURERS OF HIGH PERFORMANCE WINDSPEC WINDOWS
ALUMINUM ENTRANCE SYSTEMS AND ARCHITECTURAL PANELS
1310 CREDITSTONE RD. CONCORD, ONTARIO L4K 5T7
Telephone (905) 738-8311 Fax (905) 738-6188

SCALE: NTS

DESCRIPTION: 5400 SERIES FIXED WINDOW

DRAWING NO.: 001