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Testing. Advising. Assuring.



THERMAL PERFORMANCE SIMULATION FOR THE WINDSPEC INC. "WINDSPEC 5400 SERIES FIXED" IN ACCORDANCE WITH CSA A440.2-09, ENERGY PERFORMANCE OF WINDOWS & OTHER FENESTRATION SYSTEMS

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-M0547-7

5 Pages, 1 Appendix

Proposal No.: 12-006-09659

Date: May 18, 2013

"Windspec 5400 Series Fixed" Simulation (CSA A440.2-09) for Windspec Inc.

Page 2 of 5 Report No. 12-06-M0547-7

1.0 INTRODUCTION

At the request of Windspec Inc., Exova was retained to conduct an Energy Performance Simulation evaluation of an Aluminium Fixed window unit identified as the "Windspec 5400 Series Fixed" in accordance with CSA A440.2-09 as outlined in proposal number 12-006-09659.

Exova Simulation No.: 12-06-M0547-7

Window Type: Fixed

Series Model: Windspec 5400 Series Fixed

Simulation Window Size: 1,200 mm (wide) x 1,500 mm (high)

Simulation CR Cavity Height: 1400 mm

Frame Material / Finish: AT (Aluminium Alloy)
Thermal Break Material: Rigid PVC / EPDM

Reinforcement Material: No

Operator Type: FIXD (Fixed 4-Sided)

Glazing Type(s):

Double Glazing Option No. 1: 6 mm PPG Solarban 60 on clear [coating surface 2] / 13 mm Argon /

6 mm Clear

Double Glazing Option No. 2: 6 mm Clear / 13 mm Argon / 6 mm PPG Solarban 60 on clear

[coating surface 3]

Gas Fill: Argon (90% Argon, 10% Air)

Gas Fill Method: Single Chamber

Spacer for Glazing Options: Edgetech Superspacer, 13 mm Overall Spacer Width,

Overall Spacer Height: 11 mm

Weatherstripping: EPDM Seals - 2 / IGU Thermal Break: EPDM / Rigid PVC

Note: Air leakage value obtained from the NAFS – AAMA/WDMA/CSA 101/I.S.2/A440-08 Exova physical test report #12-06-M0547-7P was used to compute ER.

2.0 PROCEDURE

The Building Performance Centre at Exova evaluated the above window in accordance with the procedures of the CSA A440.2-09, "Energy Performance of Windows & Other Fenestration Systems" test Standard.

Standard Notes:

- The solar absorptance of Frames was 0.5 for SHGC calculation, unless otherwise stated. Interior boundary conditions were considered "thermally broken."
- Glazing surface emissivitives are assumed to be 0.84, unless otherwise stated.
- Continuous Hardware Modelled: No

Software Employed:

International Glazing Database Version:
 Frame and Edge Modelling Software: Therm Version:
 Centre of Glass Calculation Software: Window Version:
 Total Window Unit Calculation Software: Window Version:
 6.3.54

3.0 SIMULATION RESULTS

	Simulati	on Sum	mary S	Sheet (G	Simulation Summary Sheet (Glazing Options)	ଜ		9 11 SYSTEMS LABORATORY	EMS LAB	ORATORY
	Exova Project No.: 12-06-M0547-7 Completion Date: May 18, 2013							Buildin	Building Performance Co Products Testing Group	Building Performance Centre, Products Testing Group
	Simulator: Sunny Ling Window v6.3.54.0 File Name: 12-06-M0547-7 S5400 Fixed.mdb									
	Sim	ulation D	ata - Gl	azing Sy	Simulation Data - Glazing System Library					
٥	Name	No. of Layers	Мофе	Ħ	Environmental Conditions	Keff (BTU/h-ft-F)	Overall Thickness (in)	Uval (Btu/h-ft2-F)	энес	Visible Transmittance
_	6 mm PPG Solarban 60 on Clear [Surface 2] / Argon / 6 mm Clear	2	#	06	NFRC 100-2010	0.014	0.984	0.245	0.377	0.701
2	6 mm Clear / Argon / 6 mm PPG Solarban 60 on Clear [Surface 3]	2	#	06	NFRC 100-2010	0.014	0.984	0.245	0.450	0.701

			•	CSA A440	CSA A440.2-09 Simulation Summary Sheet	ulation (Summar	Sheet					DA	SYSTEMS LABORATORY	TORY
Exova Simulation No.: 12-06-M0574-7	12-06-M	7574-7		,	Win	dowType:	WindowType: S5400 Fixed						EXO	Building Performance Centre, Products Testing Group	intre,
Simulator: Sunny Ling	Sunny Li	g,		S	Simulation Window Size: 1.500 Height (m) 1.200 Width (m) Frame Type: Aluminum	Vindow Size: 1.500 Frame Type: Aluminum	1.500 Aluminum	Height (m)	1.200	Width (m)					
Window 6.3.9.0 File Name: 12-06-M0547-7 S5400 Fixed.mdb Thoma Mareine: 8.9.6.4	12-06-M	0547-7 \$5400	Fixed.mdb		60 F	Sash Type:	. 0/10								
Therm Version:	0.0.0		;		i i	mai Dreak.	2								
Physical Report Number: 12-06-M0547-7P	12-06-M	3547-7P	Air	eakage Rate	Air Leakage Rate for Actual Window Size: 0.050	ndow Size:	0.050	L/s.m,							
		Ö	SA A440.	2-09 Simu	CSA A440.2-09 Simulation Summary for Various Configurations	nmary f	or Vario	us Confic	auration	SI					
Deceline Code		Canada 4 (tax)			Gas Information		Emissivity	sivity				L ₇₅ V	L ₇₅ Window U-Value	Visual Transmitance Energy	Energy
Frounct Code	5	oriii opace i (iii) opace z (iii)	Space z (III)		Space Fill 1 Space Fill 2 Surface 2 Surface 3 Surface 4 Surface 5	Surface 2	Surface 3	Surface 4	Surface 5	Tint	Spacer	L/s·m²	W/m²K	(Total Window)	Rating
6 mm PPG Solarban 60 on Clear [Surface 2] / Argon / 6 mm Clear	o _N	0.512		Argon		0.035				LoE	SS	0.050	2.473 0.3	0.334 0.599	S.
6 mm Clear / Argon / 6 mm PPG Solarban 60 on Clear [Surface 3]	oN	0.512		Argon			0.035			LoE	SS	0.050	2.471 0.3	0.385 0.599	6



Reported by:

Reviewed & Authorized by:

Sunny Ling, Ext. 412

Project Technlogoist, Fenestration / Walls

Products Testing Division

Jordan M. Church, B.Tech, Technologist, Ext. 546

Supervisor, Fenestration / Walls

Product Testing Division

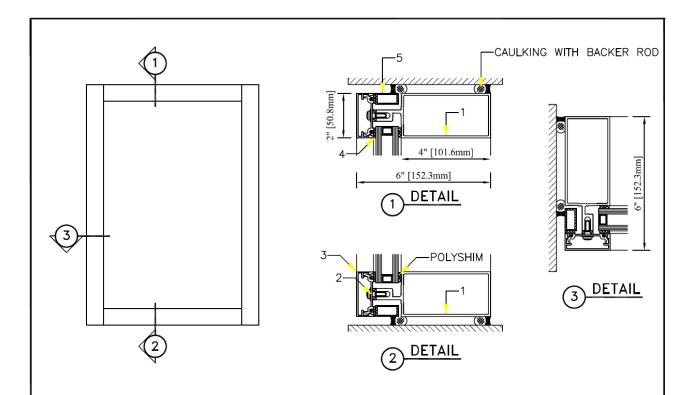
This report and service are covered under Exova Canada Inc's. Standard Terms and Conditions of Contract which may be found on our company's website www.exova.com, or by calling 1-866-263-9268



APPENDIX A

Detail as Provided Windspec Inc.

(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