

CLIENT: Viewmax Windows and Doors Ltd.
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Canada

Test Report No: T1342-4a

Issue Date: November 12, 2019

SAMPLE ID: Viewmax Windows and Doors Ltd. E3 Series Picture and Tilt & Turn Windows.

SAMPLING DETAIL: Test sample information was submitted directly to QAI for evaluation.

DATE OF RECEIPT: Documentation was received on October 28, 2019 from Viewmax Windows and Doors Ltd.

TESTING PERIOD: Evaluation was conducted November 6, 2019 through November 12, 2019.

AUTHORIZATION: Proposal 19SO05101 signed by Nenad Lihtar on May 13, 2019.

TEST PROCEDURE: Thermal simulation evaluation was performed following the methods outlined in the following standard:

CSA A440.2-19 Fenestration Energy Performance.

TEST RESULTS: Based on evaluation conducted by QAI, energy performance values for Viewmax Windows and Doors Ltd. E3 Series Picture and Tilt & Turn Window products are as found in Test Results section of this report for glazing options evaluated.

Prepared By



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Project Manager

Signed for and on behalf of QAI Laboratories, Ltd.

Reviewed By



Alex Pankov
Fenestration Reviewer

TEST METHODS:

CSA A440.2-19

QAI Laboratories Ltd. (QAI) has performed energy performance thermal modeling in accordance with CSA A440.2-19. This thermal modeling was performed using software THERM 7.4 and WINDOW 7.4, with inputs outlined below for the noted E3 Series Picture and Tilt & Turn fenestration products evaluated.

Table 1. Viewmax Windows and Doors Ltd. E3 Series Picture and Tilt & Turn Window products evaluated to CSA A440.2-19.

PRODUCT	WIDTH (mm)	HEIGHT (mm)
E3 Series Picture Window	1200	1500
E3 Series Tilt & Turn Window	1200	1500

Viewmax Windows and Doors Ltd. E3 Series Picture and Tilt & Turn Windows noted above were evaluated to AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS and CSA A440S1-19 for Air Leakage used for Energy Rating (ER) Calculation. Table 2 below lists the Air Leakage results.

Table 2. Viewmax Windows and Doors Ltd. E3 Series Picture and Tilt & Turn Window products evaluated to AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS and CSA A440S1-19.

PRODUCT	QAI NAFS Reports No.	Test Sample Size (mm)		Air Leakage (L/s/m ²)	
		Width	Height	Infiltration	Exfiltration
E3 Series Picture Window	T1342-3b dated: Oct. 10, 2019	2438	2032	0.11	0.13
E3 Series Tilt & Turn Window	T1342-3c dated: Oct. 8, 2019	1219	1816	0.54	0.51

For the above noted products, the U-value, Solar Heat Gain Coefficient (SHGC), Visual Transmittance (VT) and Energy Rating (ER) were determined for the glazing options outlined in the Test Results section below, in accordance with CSA A440.2-19 with the software noted.

All drawings used in the modeling of the above noted fenestration products can be found in Appendix A to this report.



TEST RESULTS SUMMARY:

**E3 Series Picture Window
Size: 1200 mm x 1500 mm**

Model Code	Number of Layers	Exterior Layer (mm)	Middle Layer (mm)	Interior Layer (mm)	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Cavity 1 and 2 (mm)	Spacer Bar Type	Grille Bar	Visual Transmittance Total Product	Product U-Value (W/m ² K)	Product SHGC	Energy Rating (ER)
VMW-E3-PC-5,55T(2)-16AR95SW-5,CL	2	5 CSG Double Silver LowE (CEV11-55T)	-	5 Clear	-	0.050	-	-	-	-	16.0 95% Argon	SW	-	0.38	1.56	0.22	18
VMW-E3-PC-5,55T(2)-5,55T(4)-5CL-12AR95SW	3	5 CSG Double Silver LowE (CEV11-55T)	5 CSG Double Silver LowE (CEV11-55T)	5 Clear	-	0.050	-	0.050	-	-	12.0 95% Argon	SW	-	0.20	0.97	0.15	27

# of Glass Layers	E3 Series Picture Window – Frame Representative Values (used for SHGC and VT calculations)							
	Model Code:	U-factor Center-of-glass (1000 mm x 1000 mm IGU)	U-factor Total Product	Dividers	SHGC ₀	SHGC ₁	VT ₀	VT ₁
3	VMW-E3-PC-5,55T(2)-5,55T(4)-5CL-16AR95SW	0.729230	0.9744814	NONE	0.003589	0.799645	0.000000	0.796056
				<1"	0.006370	0.717059	0.000000	0.710689
				≥1"	0.008993	0.639153	0.000000	0.630160

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E3 Series Tilt & Turn Window
Size: 1200 mm x 1500 mm

Model Code	Number of Layers	Exterior Layer (mm)	Middle Layer (mm)	Interior Layer (mm)	Emissivity Surface 1	Emissivity Surface 2	Emissivity Surface 3	Emissivity Surface 4	Emissivity Surface 5	Emissivity Surface 6	Cavity 1 and 2 (mm)	Spacer Bar Type	Grille Bar	Visual Transmittance Total Product	Product U-Value (W/m ² K)	Product SHGC	Energy Rating (ER)
VMW-E3-TT-5,55T(2)-16AR95SW-5,CL	2	5 CSG Double Silver LowE (CEV11-55T)	-	5 Clear	-	0.050	-	-	-	-	16.0 95% Argon	SW	-	0.32	1.56	0.20	16
VMW-E3-TT-5,55T(2)-5,55T(4)-5CL-12AR95SW	3	5 CSG Double Silver LowE (CEV11-55T)	5 CSG Double Silver LowE (CEV11-55T)	5 Clear	-	0.050	-	0.050	-	-	12.0 95% Argon	SW	-	0.17	1.05	0.13	24

# of Glass Layers	E3 Series Tilt & Turn Window – Frame Representative Values (used for SHGC and VT calculations)							
	Model Code:	U-factor Center-of-glass (1000 mm x 1000 mm IGU)	U-factor Total Product	Dividers	SHGC ₀	SHGC ₁	VT ₀	VT ₁
3	VMW-E3-TT-5,55T(2)-5,55T(4)-5CL-12AR95SW	0.729230	1.048941	NONE	0.005432	0.690319	0.000000	0.684887
				<1"	0.008005	0.613896	0.000000	0.605891
				≥1"	0.010421	0.542154	0.000000	0.531733

See notes on the following page.

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