

CLIENT: Viewmax Windows & Doors Co. Ltd.
297 HuaXin Road QiaoRun Development Zone
Yanggu, Liaocheng, Shandong
252 300
China

Test Report No: T1342-3c	Issue Date: October 10, 2019
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SAMPLE ID: Viewmax Windows & Doors Co. Ltd. E3 Series Tilt & Turn Window.

SAMPLE DESCRIPTION: Width: 1219 mm; Height: 1816 mm. See page 5-8 for full description.

SAMPLING DETAIL: Test sample from Viewmax Windows & Doors Co. Ltd. was submitted directly to QAI.

DATE OF RECEIPT: Test sample was received on September 9, 2019

TESTING PERIOD: Testing was conducted September 25, 2019 through October 8, 2019.

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

AUTHORIZATION: Proposal #19SO05072-, signed by Nenad Lihtar, dated May 11, 2019.

TEST PROCEDURE: Testing was performed following the methods and requirements outlined in the following standards:
AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS – North American Fenestration Standard/Specification for windows, doors, and skylights.
CSA A440S1-19 – Canadian Supplement to NAFS.

TEST RESULTS:

E3 Series Tilt & Turn Window: Class R – PG20: Size tested 48.0 x 71.5 in – Type DAW Class R – PG960 (SI): Size tested 1219 x 1816 mm – Type DAW
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Detailed test results and product ratings are available on pages 3-4.

CONTENTS: Test Report pages 1 through 31.

Prepared By



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Signed for and on behalf of
QAI Laboratories, Ltd



Neil Dumont
Fenestration Reviewer

TEST CONDITIONS:

AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS and CSA A440S1-19

QAI Laboratories Ltd. (QAI) was retained by Viewmax Windows & Doors Co. Ltd. to perform testing in accordance with the mandatory test requirements of AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS and CSA A440S1-19 on a representative sample of a 1219 mm x 1816 mm E3 Series Tilt & Turn 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 Viewmax Windows & Doors Co. Ltd. were verified by QAI for the window unit tested and are shown in Appendix A.

Installed by: Viewmax Windows & Doors Co. Ltd.

Installation details:

- Bead of structural sealant between test specimen and wooden test buck.
- Test specimen fastened around to wooden test buck using #18 x 3-1/4" pan-head screws spaced approximately every 19".

Wooden test buck details:

- Inner frame: nominal 2"x 6" stud framing.
- Outer frame: nominal 2" x 12" stud framing.
- Rough opening: 3/16" larger in width and 1/4" larger in height.
- Shims: Ten 7/16" x 1-1/2" x 3-3/8" rigid PVC shims in total installed around test specimen. Two shims at head, two shims at sill and three at each jamb.

PRODUCT RATINGS:

Table 1: Summary of test results

Test Name	AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS and CSA A440S1-19 Results:
Air Leakage Resistance Test (ASTM E283)	Pressure differential = 75 Pa Infiltration result = 0.538 L/s/m ² (0.106 cfm/ft ²) Exfiltration result = 0.506 L/s/m ² (0.100 cfm/ft ²) Overall result = A2 Level
Water Penetration Resistance Test (ASTM E547)	Maximum pressure differential = 290 Pa (DP 40 – 6.00 psf)
Uniform Load Deflection Test (ASTM E330 – Procedure A)	Design pressure = 1440 Pa (DP 30) Maximum pressure differential = 1440 Pa (30.1 psf) Maximum deflection at design pressure = 4.41 mm (0.173") - Measurement taken along hinged stile
Uniform Load Structural Test (ASTM E330 – Procedure A)	Design pressure = 960 Pa (DP 20) Maximum pressure differential = 1440 Pa (30.1 psf)
Forced Entry Resistance Test (ASTM F588)	Grade 10 - Pass
Stabilizing Arm Load Test (Clause 9.3.6.5.3)	Pass
Sash/ leaf Concentrated Load Test (Clause 9.3.6.4.2)	Pass
Thermoplastic Corner Weld Test (ASTM D618)	Pass

Maximum Size Tested: 1219 mm wide x 1816 mm tall (48.0" x 71.5")
Performance Classification: R
Performance Grade: PG 20

Primary Designator:
 Class R – PG20: Size tested 48.0 x 71.5 in – Type DAW (Dual-action Window)
 Class R – PG960 (SI): Size tested 1219 x 1816 mm – Type DAW (Dual-action Window)

Secondary Designator:
 Positive Design Pressure (DP) = 960 Pa (20.05 psf)
 Negative Design Pressure (DP) = -960 Pa (-20.05 psf)
 Water Penetration Resistance Test Pressure = 290 Pa (6.00 psf)
 Canadian Air Infiltration / Exfiltration = A2 Level

Notes:

- AAMA/WDMA/CSA 101/I.S.2/A440-17 NAFS, Clause 9.2.5: 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.