

SERIES 400 **ALTITUDE⁺** ARCHITECTURAL WINDOWS

A Higher Standard in Window Systems

Series 400 welcomes architects and builders to be creative in mixing interior & exterior colours, oversized configurations and modern styling.

STRUCTURAL

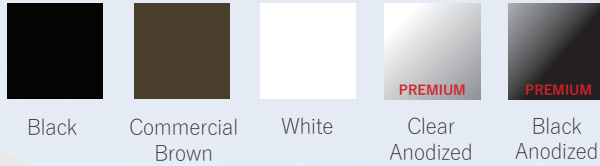
- Meets the NAFS CW Class - making the system suitable for commercial, mid-rise and residential applications
- Windows are constructed with aluminum corner keys and crimping technology
- Oversized 4 1/2 inch frame depth for higher performance

THERMAL

- Sealed with continuous, flexible weatherstripping allowing for full perimeter coverage
- Available in dual or triple glazing to meet local Energy Star requirements
- Proprietary performance core - largest thermal break available for an all-aluminum window

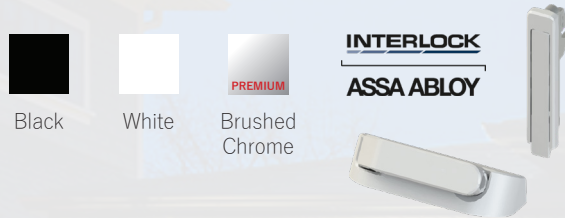
Unlimited Colours

- Custom colours & colour matching available
- Same colour in + out or split-finish



Multi-Point Hardware

- Contemporary aesthetic + optimized security



Insulated Glass

- Energy savings & solar control
- Wide variety of glass coatings available in both dual and triple-glazing to perfectly fit your application



Performance Testing

AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS 17) & CSAA440S1-19

- STRUCTURAL/WATER
Direct-Set Picture: Class CW - PG 65
Casement: Class CW - PG 80, 720Pa water
Awning: Class CW - PG 70, 720Pa water
- THERMAL
U-Factor Range ($W/m^2 * K$): 0.97 - 1.7
Solar Heat Gain (SHGC): 0.21 - 0.59
Energy Rating (ER): 26 - 46



WWW.EVERLASTPRODUCTS.CA

TORONTO | CALGARY | SASKATOON | THUNDER BAY
EDMONTON | WASHINGTON | KELOWNA

SERIES 400 ALTITUDE⁺ ARCHITECTURAL WINDOWS



PART 1 GENERAL

SECTION INCLUDES

Altitude Casement / Awning / Fixed Narrow Window complete with hardware, glazing, mulling options, weather strip, insect screen, grilles-between-the-glass, jamb extension, exterior brickmould trims, exterior sill extension and standard or specified anchors, trim and attachments

WINDOW TYPE AND CLASSIFICATIONS

AAMA/WDMA/CSA 101/I.S.2/A440-08/11, S11-09, S1-17: North American Fenestration Standard/Specification for windows, doors, and skylights.

1. Overall Performance Class and Grade:
 1. Fixed Window: Class CW, PG65
 2. Operable Casement Window: Class CW, PG80
 3. Operable Awning Window: Class CW, PG70
2. Wind Load Resistance Test Requirements (Uniform Load)
 1. Fixed Window: 3120 Pa
 2. Operable Casement Window: 5760 Pa
 3. Operable Awning Window: 5040 Pa
3. Water Leakage Test Requirements:
 1. Fixed Window: 730 Pa
 2. Operable Casement Window: 720 Pa
 3. Operable Awning Window: 720 Pa
4. Air Test Requirements:

Minimum Performance Levels	Fixed Window	Operable Casement	Operable Awning
	CSA-A440		
Air Leakage Resistance	Rating Fixed	Rating A3	Rating A3

5. Additional Window and Door Requirements:
 1. Thermal Performance (Total Window U-value): 0.32 Btu/h-ft²-°F
 2. Condensation Resistance: Temperature Index minimum 70 per CSA A440
 3. Ease of Operations: Pass
 4. Blocked Operations: Pass
 5. Forced Entry Resistance: Grade 10

SECTION 08 54 00

EVERLAST Group of Companies Altitude Casement / Awning Narrow Frame Window Specifications

PAGE 1

PART 1 GENERAL

SECTION INCLUDES

- A. Altitude Casement / Awning Narrow Window complete with hardware, glazing, mulling options, weather strip, insect screen, grilles-between-the-glass, jamb extension, exterior brickmould trims, exterior sill extension and standard or specified anchors, trim and attachments

REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. C1036: Standard Specification for Flat Glass.
 - 2. E 283: Standard Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors.
 - 3. E 330: Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Door by Uniform Static Air Pressure Difference.
 - 4. E 547: Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
 - 5. E 2190: Standard Specification for Insulating Glass Unit Performance Evaluation.
 - 6. F 2090-10: Standard Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms.
- B. Insulating Glass Manufacturer's Alliance/Insulating Glass Certification Council (IGMA/IGCC).
- C. American Architectural Manufacturer's Association/Window and Door Manufacturer's Association/Canadian Standards Association (AAMA/WDMA/CSA): (use appropriate specifications depending on certification for each product type).
 - 1. AAMA/WDMA/CSA 101/I.S.2/A440-08/11, S11-09, S1-17: North American Fenestration Standard/Specification for windows, doors, and skylights.
 - 2. AAMA 450-10: Voluntary Performance Rating Method for Muller Fenestration Assemblies
- D. Window and Door Manufacturer's Association (WDMA): Keystone Certification Program
- E. National Fenestration Rating Council (NFRC):
 - 1. 101: Procedures for Determining Fenestration Product Thermal Properties.
 - 2. 200: Procedure for Determining Solar Heat Gain Coefficients at Normal Incidence

SECTION 08 54 00

**EVERLAST Group of Companies
Altitude Casement / Awning
Narrow Frame Window Specifications**

WINDOW TYPE AND CLASSIFICATIONS

A. Design Performance Classifications

Product	Air Tested psf	Water Tested Pa	Design Pressure (Uniform Load) Pa / psf	Certification Rating	Test Size			
					Max Overall Width		Max Overall Height	
					in	mm	in	mm
Altitude Casement	A3 1.57	720	5760 / -5760 120	CW-PG80-C	36	(915)	72	(1832)
Altitude Awning	A3 1.57	720	5040 / -5040 105	CW-PG70-AP	60	(1524)	48	(1219)

Screen Testing Performance

Product	Canadian Supplement A440-S01-09	Water Tested Pa
Altitude Casement	ASTM E1748-95(09)	Passed
Altitude Awning	ASTM E1748-95(09)	Passed

SECTION 08 54 00

EVERLAST Group of Companies Altitude Casement / Awning Narrow Frame Window Specifications

PAGE 3

SUBMITTALS

- A. Shop Drawings: Submit shop drawings.
- B. Samples:
 - 1. Specified performance and design requirements.
- C. Quality Control Submittals: Certificates: Submit manufacturer's certification indicating compliance with specified performance and design requirement

QUALITY ASSURANCE

- A. Requirements: consult local code for NBC [National Building Code] adoption year and pertinent revisions for information on:
 - 1. Egress, emergency escape and rescue requirements.
 - 2. Basement window requirements.
 - 3. Windows fall prevention and/or window opening control device requirements.

STORAGE AND HANDLING

- A. Applicable frames and mulled units will include additional bracing to maintain squareness and rigidity during shipment.
- B. Store window units in an upright position in a clean and dry storage area above ground to protect from weather.

WARRANTY

The following limited warranty is subject to conditions and exclusions. There are certain conditions or applications over which EVERLAST Group of Companies has no control. Defect or problems as a result of such conditions or applications are not the responsibility of EVERLAST Groups of Companies. For a more complete description of the EVERLAST limited warranty, refer to the complete and current warranty information available by request.

- A. Clear insulating glass with stainless steel spacers is warranted against seal failure caused by manufacturing defects and resulting in visible obstruction through the glass for twenty (20) years from the original date of purchase. Glass is warranted against stress cracks caused by manufacturing defects from ten (10) years from the original date of purchase.
- B. Hardware and other non-glass components are warranted to be free from manufacturing defects for two (2) years from the original date of purchase.

PART 2 PRODUCTS

MANUFACTURED UNITS

SECTION 08 54 00

EVERLAST Group of Companies Altitude Casement / Awning Narrow Frame Window Specifications

PAGE 4

- A. Description: Altitude Casement / Awning units as manufactured by EVERLAST Group of Companies, Toronto, Ontario, Canada.

FRAME DESCRIPTION

- A. Frame:
1. Exterior extruded aluminum applied to an extruded vinyl sub-section and then finished with an interior extruded aluminum.
 2. Frame depth: 4 1/2" (114.3mm).
 3. Interior and exterior frame expander accessory are factory installed.
 4. Interior and exterior fabricated frame expander components, including head-jamb, sill and both jamb components.

SASH DESCRIPTION

- A. Sash:
1. Exterior extruded aluminum (also acts as an integrated glazing bead) applied to an extruded vinyl sub-section and then finished with an interior extruded aluminum.

GLAZING

- A. Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC when tested in accordance with ASTM E 2190. STC/OITC ratings are tested to the stated performance level in accordance with ASTM E 90-09.
- B. Glazing Method: 1 3/16" (30mm) insulating glass. Dual and Triple glazing.
- C. Glass Type: LoE Cardinal IG® i89, 180, 270, 272 and 366 with Air or Argon Gas.
- D. Glass Type Options: Obscure Glass, Sand Blasted, Rain Glass, Glue Chip, Narrow Reed, Reed, Bronze Tint, Gray Tint, Green Tint.
- E. Glazing Seal: Pressure gasket at exterior; interior has glazing boot inserted.
- F. Perimeter Spacer: Default color is mill finish (stainless).
- G. Glazing Option: STC/OITC upgrade.

MULLING

- A. Directional mull limits: 6 wide by 1 unit high; Rough Opening not to exceed 114" x 84" (2896mm x 2134mm).
- B. Directional mull limits: 5 units wide by 5 units high: Rough Opening not to exceed 96" x 84" (2438mm x 2134mm).

FINISH

SECTION 08 54 00

EVERLAST Group of Companies Altitude Casement / Awning Narrow Frame Window Specifications

PAGE 5

- A. Exterior: Aluminum clad. Duracron topcoat applied over primer. Meets or exceeds AAMA 2605 requirements.
- B. Interior: Aluminum clad. Duracron topcoat applied over primer. Meets or exceeds AAMA 2605 requirements.
- C. Colour: Various colours available, contact an Everlast representative for more details.

HARDWARE

- A. Lock: Multipoint locking mechanism is actuated from a single point of operation. The lock mechanism is concealed with only the actuator handle and escutcheon being visible to the interior.
- B. Hinges: Concealed stainless steel track and injection molded shoe.
- C. Handle: Die cast detachable folding handle.
- D. Roto-gear Operator: Coated hinge arm and housing mechanism.
- E. Snubber: Pulls the sash tight to the frame and provides engagement to keep the sash in place under structural loads.
- F. Colour: Applies to handle and locking hardware:
 - 1. Standard Color: Matte Black, White and Commercial Brown; other colours are also available.

OPTIONAL HARDWARE

- A. Coastal hardware (Stainless Steel) is available: Factory applied.
- B. Casement Window Opening Control Device: Factory applied.
- C. Awning Window Opening Control Device: Factory applied.

WEATHER STRIP

- A. Primary weather strip is an extruded bulb attached to all four sides of the frame by a kerf and provides seal between sash and frame.
- B. Secondary weather strip is an extruded hollow bulb on the sash and provides seal between sash and frame.
- C. Standard weather strip color: black.

JAMB EXTENSION

- A. Standard: factory-installed jamb extension; various sizes and finishes available.

INSECT SCREEN

- A. Tested to ASTM E-1748-95(09).

SECTION 08 54 00

EVERLAST Group of Companies Altitude Casement / Awning Narrow Frame Window Specifications

PAGE 6

- B. Factory-installed screen; screen mesh: charcoal fiberglass.
- C. Aluminum frame finish: Matches interior colour options.

GRILLES-BETWEEN-THE-GLASS

- A. Manufactured from aluminum profile placed between the two panes of glass.
 - 1. Colours:
 - a. Interior: Various colours, including split finishes are available.
 - b. Exterior: Various colours, including split finishes are available.
 - 2. Profiles: Various profile shapes are available, contact an Everlast representative.
 - 3. Pattern: Various patterns are available, contact an Everlast representative. .

SIMULATED DIVIDED LITES (SDL)

- A. Size: 1" (25mm) wide, 2" (50mm) wide with or w/out internal spacer bar; w/out is standard.
- B. Colours: Various standard and custom colours available, contact an EVERLAST representative.

ACCESSORIES AND TRIM

- A. Exterior Casing:
 - 1. Offset brickmould available in standard and custom colors.
- B. Installation Accessories:
 - 1. Factory-installed aluminum nailing fin at head, sill and side jambs.
 - 2. Installation brackets
 - 3. Mullion kit: standard mullion kit for filed assembly of related units available. Kit includes: Instruction, interior and exterior mull covers and brackets.

PART 3 EXECUTION

EXAMINATION

- A. Verification of Condition: Before installation, verify openings are plumb, square and of proper dimensions. Report frame defects or unsuitable conditions to the General Contractor and/or Everlast directly before proceeding. Damages or defects must be reported within 72 hours of receipt of finished goods.
- B. Acceptance of Condition: Beginning installation or no notification within the 72 hours confirms acceptance of existing conditions.

INSTALLATION

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EVERLAST Group of Companies Altitude Casement / Awning Narrow Frame Window Specifications

PAGE 7

- A. Assemble and install window/door unit(s) according to manufacturer's instruction and reviewed shop drawing.
- B. Install sealant and related backing materials at perimeter of unit or assembly in accordance to reviewed shop drawings.
- C. Install accessory items as required.

FIELD QUALITY CONTROL

- A. Remove visible labels and adhesive residue according to manufacturers' instruction
- B. Unless otherwise specified, water penetration resistance testing shall be conducted per AAMA 502 and ASTM E1105 at 2/3 of the fenestration products design pressure (DP) rating. Water penetration shall be defined in accordance with the test method(s) applied.

CLEANING

- A. Remove visible labels and adhesive residue according to manufacturer's instruction.
- B. Leave windows and glass in a clean condition.

PROTECTING INSTALLED CONSTRUCTION

- A. Protecting windows from damage by chemicals, solvents, paint or other construction operations that may cause damage.

END OF SECTION

SECTION 08 54 00

EVERLAST Group of Companies Altitude Picture Fixed Narrow Frame Window Specifications

PAGE 1

PART 1 GENERAL

SECTION INCLUDES

- A. Altitude Picture Fixed Narrow Window complete with glazing, mulling options, weather strip, grilles-between-the-glass, jamb extension, exterior brickmould trims, exterior sill extension and standard or specified anchors, trim and attachments

REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. C1036: Standard Specification for Flat Glass.
 - 2. E 283: Standard Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors.
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- D. Window and Door Manufacturer's Association (WDMA): Keystone Certification Program
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 - 2. 200: Procedure for Determining Solar Heat Gain Coefficients at Normal Incidence

SECTION 08 54 00

**EVERLAST Group of Companies
Altitude Picture Fixed
Narrow Frame Window Specifications**

WINDOW TYPE AND CLASSIFICATIONS

A. Design Performance Classifications

Product	Air Tested psf	Water Tested Pa	Design Pressure Pa / psf	Certification Rating	Test Size			
					Max Overall Width		Max Overall Height	
					in	mm	in	mm
Altitude Picture (FXD)	A3 1.57	440	3120 / -3120 65	CW-PG65-FW	72	(1832)	72	(1832)
Altitude CMST / FXD Muller	A3 1.57	360	2880 / -2880 60	CW-PG45-C/FW	60	(1524)	60	(1524)

Screen Testing Performance

Product	Canadian Supplement A440-S01-09	Water Tested Pa
Altitude Casement	ASTM E1748-95(09)	Passed

SECTION 08 54 00

EVERLAST Group of Companies Altitude Picture Fixed Narrow Frame Window Specifications

PAGE 3

SUBMITTALS

- A. Shop Drawings: Submit shop drawings.
- B. Samples:
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QUALITY ASSURANCE

- A. Requirements: consult local code for NBC [National Building Code] adoption year and pertinent revisions for information on:
 - 1. Egress, emergency escape and rescue requirements.
 - 2. Basement window requirements.
 - 3. Windows fall prevention and/or window opening control device requirements.

STORAGE AND HANDLING

- A. Applicable frames and mulled units will include additional bracing to maintain squareness and rigidity during shipment.
- B. Store window units in an upright position in a clean and dry storage area above ground to protect from weather.

WARRANTY

The following limited warranty is subject to conditions and exclusions. There are certain conditions or applications over which EVERLAST Group of Companies has no control. Defect or problems as a result of such conditions or applications are not the responsibility of EVERLAST Groups of Companies. For a more complete description of the EVERLAST limited warranty, refer to the complete and current warranty information available by request.

- A. Clear insulating glass with stainless steel spacers is warranted against seal failure caused by manufacturing defects and resulting in visible obstruction through the glass for twenty (20) years from the original date of purchase. Glass is warranted against stress cracks caused by manufacturing defects for ten (10) years from the original date of purchase.
- B. Hardware and other non-glass components are warranted to be free from manufacturing defects for two (2) years from the original date of purchase.

PART 2 PRODUCTS

MANUFACTURED UNITS

SECTION 08 54 00

EVERLAST Group of Companies Altitude Picture Fixed Narrow Frame Window Specifications

PAGE 4

- A. Description: Altitude Picture Fixed units as manufactured by EVERLAST Group of Companies, Toronto, Ontario, Canada.

FRAME DESCRIPTION

- A. Frame:
 - 1. Exterior extruded aluminum applied to an extruded vinyl sub-section and then finished with an interior extruded aluminum.
 - 2. Frame depth: 4 1/2" (114.3mm).
 - 3. Interior and exterior frame expander accessory is factory installed.
 - 4. Interior and exterior fabricated frame expander components, including head-jamb, sill and both jamb components.

GLAZING

- A. Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC when tested in accordance with ASTM E 2190. STC/OITC ratings are tested to the stated performance level in accordance with ASTM E 90-09.
- B. Glazing Method: 1 3/16" (30mm) insulating glass. Dual and Triple glazing.
- C. Glass Type: LoE Cardinal IG® i89, 180, 270, 272 and 366 with Air or Argon Gas.
- D. Glass Type Options: Obscure Glass, Sand Blasted, Rain Glass, Glue Chip, Narrow Reed, Reed, Bronze Tint, Gray Tint, Green Tint.
- E. Glazing Seal: Silicone bead at exterior; interior has glazing boot inserted.
- F. Perimeter Spacer: Default color is mill finish (stainless).
- G. Glazing Option: STC/OITC upgrade.

MULLING

- A. Directional mull limits: 6 wide by 1 unit high; Rough Opening not to exceed 114" x 84" (2896mm x 2134mm).
- B. Directional mull limits: 5 units wide by 5 units high: Rough Opening not to exceed 96" x 84" (2438mm x 2134mm).

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- A. Exterior: Aluminum clad. Duracron topcoat applied over primer. Meets or exceeds AAMA 2605 requirements.
- B. Interior: Aluminum clad. Duracron topcoat applied over primer. Meets or exceeds AAMA 2605 requirements.
- C. Colour: Various colours available, contact an Everlast representative for more details.

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EVERLAST Group of Companies Altitude Picture Fixed Narrow Frame Window Specifications

PAGE 5

WEATHER STRIP

- A. Primary weather strip is an extruded bulb attached to all four sides of the frame by a kerf and provides seal between frame and insulated sealed unit..
- B. Secondary weather strip is an extruded hollow bulb on the glazing bead and provides seal between frame and insulated sealed unit.
- C. Standard weather strip color: black.

JAMB EXTENSION

- A. Standard: factory-installed jamb extension; various sizes and finishes available.

GRILLES-BETWEEN-THE-GLASS

- A. Manufactured from aluminum profile placed between the two panes of glass.
 - 1. Colours:
 - a. Interior: Various colours, including split finishes are available.
 - b. Exterior: Various colours, including split finishes are available.
 - 2. Profiles: Various profile shapes are available, contact an Everlast representative.
 - 3. Pattern: Various patterns are available, contact an Everlast representative. .

SIMULATED DIVIDED LITES (SDL)

- A. Size: 1" (25mm) wide, 2" (50mm) wide with or w/out internal spacer bar; w/out is standard.
- B. Colours: Various standard and custom colours available, contact an EVERLAST representative.

ACCESSORIES AND TRIM

- A. Exterior Casing:
 - 1. Offset brickmould available in standard and custom colors.
- B. Installation Accessories:
 - 1. Factory-installed aluminum nailing fin at head, sill and side jambs.
 - 2. Installation brackets
 - 3. Mullion kit: standard mullion kit for filed assembly of related units available. Kit includes: Instruction, interior and exterior mull covers and brackets.

PART 3 EXECUTION

SECTION 08 54 00

EVERLAST Group of Companies Altitude Picture Fixed Narrow Frame Window Specifications

PAGE 6

EXAMINATION

- A. Verification of Condition: Before installation, verify openings are plumb, square and of proper dimensions. Report frame defects or unsuitable conditions to the General Contractor and/or Everlast directly before proceeding. Damages or defects must be reported within 72 hours of receipt of finished goods.
- B. Acceptance of Condition: Beginning installation or no notification within the 72 hours confirms acceptance of existing conditions.

INSTALLATION

- A. Assemble and install window/door unit(s) according to manufacturer's instruction and reviewed shop drawing.
- B. Install sealant and related backing materials at perimeter of unit or assembly in accordance to reviewed shop drawings.
- C. Install accessory items as required.

FIELD QUALITY CONTROL

- A. Remove visible labels and adhesive residue according to manufacturers' instruction
- B. Unless otherwise specified, water penetration resistance testing shall be conducted per AAMA 502 and ASTM E1105 at 2/3 of the fenestration products design pressure (DP) rating. Water penetration shall be defined in accordance with the test method(s) applied.

CLEANING

- A. Remove visible labels and adhesive residue according to manufacturer's instruction.
- B. Leave windows and glass in a clean condition.

PROTECTING INSTALLED CONSTRUCTION

- A. Protecting windows from damage by chemicals, solvents, paint or other construction operations that may cause damage.

END OF SECTION

**PERFORMANCE TESTING IN ACCORDANCE WITH
AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011), CSA A440S1-09 & CSA A440S1-17
AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS 2017) & CSA A440S1-19**

PRODUCT MANUFACTURER
<p>EVERLAST GROUP OF COMPANIES (o/a EVERLAST, EVERLAST WEST AND ALBERTA VINYL WINDOWS AND DOORS) 299 Carlingview Dr. Etobicoke, ON M9W 5G3 416-241-8527</p>

REPORT TF-00124-A2

TEST REPORT SUMMARY	
Product type	Casement Window
Product series/model	Altitude Casement – (Hybrid PVC/Aluminum – PVC core with interior/exterior aluminum)
Primary designator	Class CW – PG 80: Size tested 920 x 1830 mm (~36 x 72 in) – Type C
Optional secondary designator	Positive Design pressure (DP) = 3840 Pa (~80.20 psf) Negative design pressure (DP) = -3840 Pa (~-80.20 psf) Water penetration resistance test pressure = 720 Pa (~14.50 psf) Canadian air infiltration/ exfiltration level = A3 Level (NAFS-11) / Not applicable (NAFS-17)
Option(s)	None

See UL Laboratory Canada Inc. complete report TF-00124-A2 for test specimen description and detailed test results

Test laboratory location	UL Laboratory Canada Inc. (7 Underwriters Road, Toronto, ON, M1R 3A9)		
Test completion date	2020-10-29	Number of pages	7 pages & 1 appendix
Report date	2020-11-17	Revision date	-

Prepared by:



Digitally Signed by:

Adrian Muntean, Sr. Tech.
Fenestration Testing Department
UL Laboratory Canada Inc.

Approved by:



Digitally Signed by:

Haya Soghrati, B.Arch. Sc.
Manager, Toronto Laboratory Testing Services
UL Laboratory Canada Inc.

The results relate only to the product(s) in this report. This report shall not be reproduced, except in full, without the written approval of UL Laboratory Canada Inc.

TEST REPORT FOR NATIONAL RESEARCH COUNCIL OF CANADA

Report No.: 102842871SAT-002F

Date: 03/28/18

REPORT ISSUED TO

NATIONAL RESEARCH COUNCIL OF CANADA

1200 Montreal Rd.
Ottawa, ON K1A 0R6
Canada

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Nation Research Council of Canada to evaluate resistance to flame propagation in accordance with **CAN/ULC-S134, Standard Method of Fire Test of Exterior Wall Assemblies, 2nd Edition, dated August 2013**, on Energi Fenestration Solution H4600 (PVC with aluminum cladding) assembly. Testing was conducted at the Intertek B&C test facility in Elmendorf, Texas, USA. Results obtained are tested values and were secured by using the designated test method.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

Wall System: Exterior Non-load-bearing Wall Assembly

Combustible Components: PVC with Aluminum Cladding Window Frames

CAN/ULC S134 Test Results

The assembly described and tested in this report **did** meet the Conditions of Acceptance of **CAN/ULC-S134, Standard Method of Fire Tests of Exterior Wall Assemblies, 2nd Edition, dated August 2013**. Construction of the full assembly is summarized in Section 7 of this test report.

For INTERTEK B&C:

COMPLETED BY:	Abel de Hoyos Senior Project Manager— Fire Resistance	REVIEWED BY:	Herbert W. Stansberry II
TITLE:	Fire Resistance	TITLE:	Engineering Supervisor
SIGNATURE:		SIGNATURE:	
DATE:	03/28/18	DATE:	03/28/18

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APPENDIX: DRAWINGS & BILL OF MATERIALS

The results relate only to the product(s) in this report. This report shall not be reproduced, except in full, without the written approval of UL Laboratory Canada Inc.

1.0 INTRODUCTION

UL Laboratory Canada Inc. was retained by " **EVERLAST GROUP OF COMPANIES (o/a EVERLAST, EVERLAST WEST AND ALBERTA VINYL WINDOWS AND DOORS)**" to test a fenestration product according to the performance levels in the *AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011) Standard and its Canadian supplements CSA A440S1-09 & CSA A440S1-17 and the AAMA/WDMA/CSA 101/I.S. 2/A440-17 (NAFS 2017) Standard and its Canadian supplement CSA A440S1:19*. The sample components and manufacturing are documented in section 2.0.

Note concerning the use of units of measurement in this report:

According to the *AAMA/WDMA/CSA 101/I.S.2/A440 Standard*, the use of SI (metric) units is the standard, while IP (Imperial) values given in parentheses are for reference purposes only, and are inexact rounded values. Section 5.0 contains testing results converted to IP units for the sake of convenience only. The only exception to using SI values is in the Performance Grade (PG) portion of the product designation.

Note concerning drawings:

The drawings reviewed for the production of this report are stamped and are on file at UL Laboratory Canada Inc. The availability of individual drawings will be at the discretion of the client.

2.0 DESCRIPTION OF THE SPECIMEN(S) TESTED

Model

Altitude Casement – (Hybrid PVC/Aluminum – PVC core with interior/exterior aluminum)

Product type

C – (Casement window)

Operation mode

Outswing opening

Drawings (Appendix)

Bill-of-Materials & Cross Sections

Drawings (Others)

ES18640, ES18637, ES18635, ES 18634

Date(s) of sample reception

2020-05-26

Date(s) of testing

2020-06-03, 2020-07-02, 2020-07-15, 2020-07-20, 2020-10-29

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Test specimen installation (test buck)

Material: Spruce, Pine, Fir (SPF) (~2" x 6")

R.O. clearances: Head/Sill: 10 mm (0.39"), shimmed with (4) 6.35 mm (0.24") wood shims at 260 mm (10.24") C/C / Jambs: 13 mm (0.51") shimmed with (6) 6.35 mm (0.24") wood shims at 285 mm (11.22") C/C.

Fastening: Sill: Fastened through (4) metal clips at 260 mm (10.24") C/C with (2) # 8 x 1-1/4" screws ea. / Head: Fastened through (4) metal clips at 260 mm (10.24") C/C with (2) # 8 x 1-1/4" screws ea. / Jambs: Fastened through (6) metal clips at 285 mm (11.22") C/C with (2) # 8 x 1-1/4" screws ea.

Sealing detail: Exterior perimeter surface sealed with sealant.

Frame

Material: Hybrid PVC/Aluminum, extruded PVC core with interior and exterior extruded aluminium/ joints sealed with sealant.

Joinery type: Mitered corner, mechanically fastened (4) # 8 x 2-1/2" screws and sealed with foam tape per corner / Interior corners sealed with sealant.

Reinforcement: None.

Weatherstripping: Bulb with Fin (1 Row): T-slot, inner frame perimeter, corners sealed with sealant

Sealant: Interior frame corners sealed with sealant / interior and exterior extruded aluminum and extruded PVC core joints surface sealed with sealant / bulb weatherstrip corners sealed with sealant.

Drainage: Sloped sill.

Overall dimensions: 920 mm (36.22") W x 1830 mm (72.05") H

Window Sash

Material: Hybrid PVC/Aluminum, extruded PVC core with interior and exterior extruded aluminium.

Joinery type: Mitered corner, mechanically fastened with (1) # 8 x 2-1/2" screws and sealed with sealant per corner.

Thermal Break: None.

Reinforcement: None.

Weatherstripping: Bulb: (1 Row) Co-extruded, inner sash perimeter at extruded PVC core / Pile: (1 Row) Stiles and bottom rail, outer sash edge / Bulb: (1 Row) Top rail, outer sash edge.

Sealant: Sash corners sealed with sealant / Corner bead of sealant at inner glazing cavity corners.

Drainage: None.

Glazing: Double glazed sealed unit 30.16 mm (1.19"), channel glazed / Nominal glass thickness : Exterior: 4 mm (0.16") / Interior: 4 mm (0.16") / Air space gap: 22.0 mm (0.87") / Type of glass: Annealed with LowE / Type of spacer: XL Edge / Type of sealant: Dual-sealed / Type of filling gas: Argon / Glass retention: Extruded Aluminum glazing stop, glazing cavity exterior perimeter, fastened with (1) #8 x 2-1/2" screws per corner / Glazing seals: Fin: Interior glazing cavity perimeter; Glazing tape: inner glazing cavity perimeter; Corner bead: inner glazing cavity corners; Glazing Spline: Outer glazing cavity perimeter / Grid description: None / Setting blocks: None / Daylight opening: 776 mm (30.55") W x 1693 mm (66.65") H

Overall dimensions: 865 mm (34.06") W x 1779 mm (70.04") H

Screen

Frame material: Rolled aluminium.

Mesh material: Fiberglass.

Anchoring method: Spring Loaded Pins: (2) Plastic, ends of the bottom rail, at corner keys / Anchoring Pins: (2) Plastic, ends of top rail, at corner keys.

Auxiliary parts: Corner Keys: (4) Plastic, one per corner.

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Overall dimensions: 798 mm (31.42") W x 1706 mm (67.17") H

Hardware

See hardware description in the bill of materials. Part number and manufacturer/ supplier information for hardware components provided by the client.

Multipoint lock: (1) Metal, lock jamb, 270 mm (10.63") from sill, fastened with (2) # 8 x 3/4" screws ea.

Tie Bar: (1) Metal, 1675 mm (65.94") length, lock jamb.

Tie Bar Guides: (6) Plastic, lock jamb, at 70 mm (2.76"), 320 mm (12.60"), 685 mm (26.97"), 1040 mm (40.94"), 1360 (53.54"), 1660 (65.35") from the sill, fastened with (3) # 9 x 1" screws ea.

Keepers: (3) Metal, lock stile, at 150 mm (5.91"), 880 mm (34.65"), 1600 mm (62.99"), from the bottom rail, fastened with (2) # 6 x 1/2" screws ea.

Snubbers: (4) Metal, hinge jamb, at 160 mm (6.30"), 745 mm (29.33"), 1355 mm (53.35"), 1705 mm (67.13") from the sill, fastened with (2) # 6 x 1/2" screws ea.

Hinges: (2) Metal, top and bottom rails corners at hinged stile, fastened with (4) # 10 x 3/4" screws ea.

Rotary operator: (1) Metal, sill, 270 mm (10.63") from hinge jamb, fastened with (6) # 10 x 1" screws.

Operator track: (1) Metal, bottom rail, at hinged stile corner, fastened with (6) # 10 x 3/4" screws.

Sash glider: (1) Metal, bottom rail at hinged stile, fastened with (4) # 10 x 3/4" screws ea.

3.0 ALTERATION(S)

Alteration(s) performed in the laboratory on tested specimen to meet the reported performances:

Water Penetration Test:

- Original frame's bulb weatherstrip was replaced with a new bulb weatherstrip.
- A sash glider was added to the bottom rail at hinge stile.

Uniform Load Structural Test:

- One additional snubber was added to the hinge jamb. The snubbers were spaced at 160 mm (6.30"), 745 mm (29.33"), 1355 mm (53.35"), 1705 mm (67.13") from the sill.

4.0 TEST BENCH INFORMATION

Test bench identification: TB-AWS-08

The calibration of this test bench was done as per Article 9.0 of *ASTM E283, Standard Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors*, and *ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference* and *ASTM E547 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Cycling Static Air Pressure Difference*. The last calibration of this test bench and related equipment was performed in October 2020.

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5.0 RESULTS OF PERFORMANCE TESTS

SPECIFICATIONS	TEST RESULTS
<p><u>Ease of operation test</u> Force to initiate motion: R – LC Classifications < 60 N (~13.49 lbf) CW-AW Classifications < 70 N (~15.74 lbf) Force to maintain motion: R – LC Classifications < 30 N (~6.74 lbf) CW-AW Classifications < 45 N (~10.12 lbf) Force to latch < 100 N (~22.48 lbf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.1. A440S1-09 & A440S1-17 Canadian Supplements par. 5.2 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.1. A440S1-19 Supplément Canadien par. 5.3 ASTM-E2068-00 (2008)</p>	<p>Passed</p> <p>CW Classification</p> <p>Measured to initiate = 8.90 N (~2 lbf) Measured to maintain = 66.72 N (~15 lbf) Measured to latch = 35.59 N (~8 lbf)</p>
<p><u>U.S. Air Leakage Resistance Test</u> R – LC – CW Classifications: $Q_{inf} \leq 1.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.3 cfm/ft² @ 1.57 psf) AW Classification: $Q_{inf} \leq 0.5 \text{ l/s-m}^2 @ 300 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 6.27 psf)</p> <p><u>Canadian air infiltration/exfiltration levels</u> R – LC – CW Classifications: A2: $Q \leq 1.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.3 cfm/ft² @ 1.57 psf) A3: $Q \leq 0.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 1.57 psf) AW Classification: A2: $Q \leq 0.5 \text{ l/s-m}^2 @ 300 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 6.27 psf) A3: $Q \leq 0.5 \text{ l/s-m}^2 @ 300 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 6.27 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.2 A440S1-09 & A440S1-17 Canadian Supplements par. 5.3 ASTM-E283-04 (2012)</p>	<p>Class CW – U.S. Requirements (NAFS-11)</p> <p>A3 Level – Canadian Requirements (NAFS-11)</p> <p>Surface: 1.68 m² (~18.12 ft²)</p> <p>$Q_{inf} = 0.30 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~0.06 cfm/ft² @ 1.57 psf) $Q_{exf} = 0.30 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~0.06 cfm/ft² @ 1.57 psf)</p>
<p><u>Air Leakage Resistance Test</u> R – LC Classifications: $Q_{inf} \leq 1.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.3 cfm/ft² @ 1.57 psf) Canadian air infiltration/exfiltration levels: A2: $Q \leq 1.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.3 cfm/ft² @ 1.57 psf) A3: $Q \leq 0.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 1.57 psf) CW Classification: $Q \leq 0.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 1.57 psf) AW Classification: $Q_{inf} \leq 0.5 \text{ l/s-m}^2 @ 300 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 6.27 psf) $Q_{exf} \leq 0.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 1.57 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.2 A440S1-19 Canadian Supplement par. 5.4 ASTM-E283-04 (2012)</p>	<p>Class CW – Passed (NAFS-17)</p> <p>Surface: 1.68 m² (~18.12 ft²)</p> <p>$Q_{inf} = 0.30 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~0.06 cfm/ft² @ 1.57 psf) $Q_{exf} = 0.30 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~0.06 cfm/ft² @ 1.57 psf)</p>

The results relate only to the product(s) in this report. This report shall not be reproduced, except in full, without the written approval of UL Laboratory Canada Inc.

SPECIFICATIONS	TEST RESULTS
<p>Water Resistance Test No water infiltration under a minimum pressure differential: Designation LW: 0 Pa (0 psf) Class R: 140 Pa (~2.92 psf) Class LC: 180 Pa (~3.76 psf) Class CW: 220 Pa (~4.59 psf) Class AW: 390 Pa (~8.15 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.3. A440S1-09 & A440S1-17 Canadian Supplements par. 5.4 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.2 A440S1-19 Canadian Supplement par. 5.5</p> <p>Classes R, LC & CW: ASTM-E547-00 (2009 & 2016) Class AW: ASTM-E547-00 (2009 & 2016) & ASTM-E331-00 (2009 & 2016)</p>	<p>Class CW – U.S. & Canadian Requirements</p> <p>No water infiltration under the minimum test pressure for the Class.</p> <p>No water infiltration at an optional test pressure differential of:</p> <p>220 Pa (~ 4.59 psf) - U.S. & Canadian Requirements</p> <p>580 Pa (~12.11 psf)- U.S. & Canadian Requirements</p> <p>720 Pa (~15.04 psf) - Canadian requirements only</p>
<p>Uniform Load Deflection Test Member deflection at a minimum design pressure (DP) and at optional DP:</p> <p>Class R: 720 Pa (~15.04 psf) – Reported only Class LC: 1200 Pa (~25.06 psf) – Reported only Class CW: Limited to L/175 at 1440 Pa (~30.08 psf) Class AW: Limited to L/175 at 1920 Pa (~40.10 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.4 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.4 ASTM-E330-02 (2010) & ASTM-E330-14</p>	<p>DP 80 – Class CW</p> <p>Net deflection measured on the lock stile (Gateway): 2.98 mm @ -1440 Pa (~0.12" @ -30.08 psf) 1.99 mm @ +1440 Pa (~0.08" @ +30.08 psf)</p> <p>Net deflection measured on the hinge stile (Gateway): 3.88 mm @ -1440 Pa (~0.15" @ -30.08 psf) 2.87 mm @ +1440 Pa (~0.11" @ +30.08 psf)</p> <p>Net deflection measured on the lock stile (DP 80): 8.51 mm @ -3840 Pa (~0.34" @ -80.20 psf) 3.55 mm @ +3840 Pa (~0.14" @ +80.20 psf)</p> <p>Net deflection measured on the hinge stile (DP 80): 4.97 mm @ -3840 Pa (~0.20" @ -80.20 psf) 4.06 mm @ +3840 Pa (~0.16" @ +80.20 psf)</p> <p>Allowed ≤ 9.75 mm (~0.38")</p>

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SPECIFICATIONS	TEST RESULTS
<p>Uniform Load Structural Permanent deformation is limited at a minimum structural test pressure (STP) and at optional STP of: Class R: ≤ 0.4% (L) at 1080 Pa (~22.56 psf) Class LC: ≤ 0.4% (L) at 1800 Pa (~37.59 psf) Class CW: ≤ 0.3% (L) at 2160 Pa (~45.11 psf) Class AW: ≤ 0.2% (L) at 2880 Pa (~60.15 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.4 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.4 ASTM-E330-02 (2010) & ASTM-E330-14</p>	<p>STP 80 – Class CW</p> <p>Permanent deformation measured on the lock stile (Gateway): 0.19 mm @ -2160 Pa (~0.01" @ -45.11 psf) 0.04 mm @ +2160 Pa (~0.00" @ +45.11 psf)</p> <p>Permanent deformation measured on the hinge stile (Gateway): 0.42 mm @ -2160 Pa (~0.02" @ -45.11 psf) 0.20 mm @ +2160 Pa (~0.01" @ +45.11 psf)</p> <p>Permanent deformation measured on the lock stile (STP 80): 0.17 mm @ -5760 Pa (~0.01" @ -120.30 psf) 0.02 mm @ +5760 Pa (~0.00" @ +120.30 psf)</p> <p>Permanent deformation measured on the hinge stile (STP 80): 0.17 mm @ -5760 Pa (~0.01" @ -120.30 psf) 0.01 mm @ +5760 Pa (~0.00" @ +120.30 psf)</p> <p>Allowed ≤ 5.12 mm (~0.20")</p>
<p>Forced-Entry Resistance All windows shall be tested according to ASTM F588-07 & ASTM F588-14 Grade 10. AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.5 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.5</p>	<p>Passed</p> <p>Grade 40</p> <p>T₁=10 min., L₁=1334 N (~300 lbf), L₂=667 N (~150 lbf) & L₃=267 N (~60 lbf)</p>
<p>Sash Vertical Deflection Test Vertical deflection < 2% of sash width under a load of: Classes R & LC: 200 N (~44.96 lbf) Classes CW – AW: 270 N (~60.70 lbf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.6.4.2 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.6.4.2</p>	<p>Passed</p> <p>Class CW</p> <p>Allowed: 18.4 mm (0.72") Measured: 1.2 mm (0.05") for 270 N (~60.70 lbf)</p>
<p>Distributed Load Test No damage to hardware under a uniform load of Class R: 240 Pa (~5.0 psf) Classes LC-CW-AW: 300 Pa (~6.27 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.6.5.2 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.6.5.2</p>	<p>Passed</p> <p>Classes CW</p> <p>No permanent deformation under a uniform load of 300 Pa (~6.27 psf)</p>
<p>Insect Screen Test <u>Canadian (only) requirements:</u> Insect screens shall be tested in accordance with ASTM E1748-95(09) in the outward direction only under a load of 60 N (~13 lbf).</p> <p>A440S1-09 & A440S1-17 Canadian Supplements par. 5.1 A440S1-19 Canadian Supplement par. 5.2</p>	<p>Passed</p> <p>No screen disengagement or permanent deformation observed.</p>

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6.0 CONCLUSION

The fenestration product described in this report was tested in accordance with the *AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011) Standard and its Canadian supplements CSA A440S1-09 & CSA A440S1-17 and the AAMA/WDMA/CSA 101/I.S. 2/A440-17 (NAFS 2017) Standard and its Canadian supplement CSA A440S1:19*, regarding performance testing. The above results were secured by using the designated test methods and the performance requirements of the referenced specification.

Detailed assembly drawings showing wall thickness of all members, corner construction and hardware application are on file and have been compared to the sample submitted.

The test records from this evaluation will be retained for a minimum of four (4) years from the date of report issuance. This report does not constitute certification of this product, which may only be granted by a certification agency.

Note on the Limitation of Liability:

Due care was taken in performing the testing sequence and in reporting the results related to the test specimen received for evaluation. Through acceptance of this report, the Client agrees to exempt UL Laboratory Canada Inc. employees and owners from all liability claims and demands arising from any matter related to or concerning the quality and execution of the performance evaluation contained in this report. The Decision Rule is based on Simple Acceptance (Measurement Uncertainty is not taken into account when making a statement of conformity).

7.0 REVISION LOG

Rev. #	Date	Page(s)	Revision(s)
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APPENDIX
DRAWINGS & BILL OF MATERIALS

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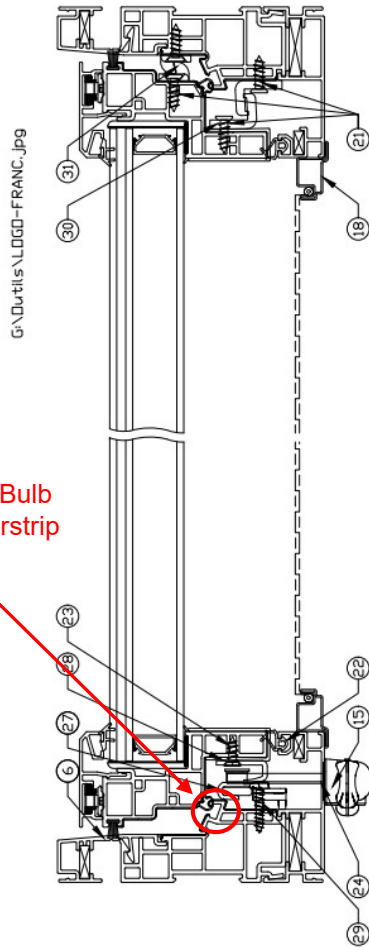
ALTITUDE+ CASEMENT

BOM

DIE / PART NO.	DESCRIPTION	SUPPLIER	
ES18640	INSIDE CM FRAME	CANART	
ES18637	EXTERIOR OPERATING FRAME		
ES18635	EXTERIOR OPERATING SASH		
ES18634	INTERIOR OPERATING SASH		
ES18639	INSIDE FIXED FRAME		
XS18641	COUPLER		
ES18636	EXTERIOR FIXED FRAME		
ES18638	ALUMINUM GLASS TOP		
ES18647	LARGE CORNER KEY		
ES18648	MEDIUM / SMALL CORNER KEY		
ES19778	NAIL FIN		
ES18638	ALUMINUM GLASS TOP		
L4902	FIXED/OPERATING FRAME THERMO BREAK		ENERGI LAVAL
L4618	OPERATING SASH THERMO BREAK		
Q9185	OPERATING SASH GLAZING WEATHERSTRIP		
Q9187	OPERATING FRAME WEATHERSTRIP		
C011-0201-085	DUAL ARM Powder Coated LH	INTERLOCK HARDWARE	
C011-0202-085	DUAL ARM Powder Coated RH		
C011-0635/0635-000	Handle and Cover (A/B) LH White	 <p>CONFORME DOSSIER TF-00124-A2 COMPLIES TO FILE</p> <hr/> <p>UL Laboratory Canada Inc. / UL Laboratory Canada Inc. 2020-11-17 VÉRIFIÉ / CHECKED</p>	
C011-0702	Track Assembly Facemount (Large Dual)		
H02-0101-085	13" CASEMENT HINGE ARM-LH Powder Coat		
CH02-0102-085	13" CASEMENT HINGE ARM-RH Powder Coat		
CH02-0201	13" Hinge Track LH Stainless Steel		
CH02-0202	13" Hinge Track RH Stainless Steel		
CL01-0069-085 to CL01-0081-085	TIE BAR		
C011-0503-085	Flat Sash Bracket LH		
C011-0504-085	Flat Sash Bracket RH		
CL02-2035-00B	Casement Guide BLACK		
CL02-2030-00B	Casement Strike BLACK		
CL03-0227-00B	Retainer (Commercial Window)		
CL03-0937-000	Casement MP Handle Powder Coat, WHITE		
51	BULB SEAL FOR FIXED FRAME		ELTON
497	ALUMINUM GLASS STOP GASKET		
508	FIXED WINDOW SETTING BLOCK		
176	SHIM SITTING BLOCK FOR OPERATING SASH		
RIN1905	ALTITUDE SNUBBER	S.I.L.	
CENTER KEY	ALTITUDE CENTER KEY		
WC92L	WEEP COVER (MUST SPECIFY COLOUR)		
FIXED GASKET BL	FIXED CORNER GASKET BLACK		
CASEMENT GASKET BL	CM CORNER GASKET BLACK		
FIXED GASKET WT	FIXED CORNER GASKET WHITE		
CASEMENT GASKET WT	CM CORNER GASKET WHITE		
RIN1905	LARGE CORNER KEYS (CanArt Die# ES18647)	DEMAR	
CENTER KEY	SMALL CORNER KEYS (CanArt Die# ES18648)		
PB9235-187	WEATHER STRIP (BLACK)	SCHLEGL CANADA	
7506.S / 500	SASH CORNER KEY	N.A.P.	
CGS-1154.1.150	MULL PLATES	SPEC TOOLS	
CTM-1450	INSTALL CLIPS		
GL-NO708000 OP	GLAZING TAPE 1/8	Echo Tape	
4583	BLACK SILICONE (CARTRIDGE)	ADFAST	
4551	CLEAR SILICONE (CARTRIDGE)		
4551/S	CLEAR SILICONE (SAUSAGE) (THERMOBREAK)		
STKFS61203	SELF TAPPING (6 X 1/2 FOR STRIKERS & INSTALL CLIPS)	HOLD TITE	
SWDFSDU710341883	STAINLESS STEEL SCREWS #10- 12 X 3/4 FOR HINGES		
STPPQ8203	#8 - 15 X 2 (SASH ASSEMBLY)		
STPPQ821203	#8 - 15 X 2 1/2 (FOR FRAME ASSEMBLY)		
STCFPF8344103	#8 - 32 X 3/4 (MP LOCK)		
STFSFU7109161883	STAINLESS STEEL #10 - 12 X 9/16(FOR SNUBBERS)		
STSPS5803	#6 X 5/8 (FOR WOOD ON INSTALL BRACKET)		
SWDFQD611403	#6 - 13 X 1 1/4 FOW WOOD CORNERS		
STCFQNI78103	#8 - 10 X 1 (FOR OPERATOR)		
SSAPLES1814118L	#14 1/4 CROWN X 1 1/8 LONG 18 GAUGE (STAPLES)		
3/4" screw	.63" PHP screws for lock handle	INTERLOCK HARDWARE	

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ALTITUDE MEC



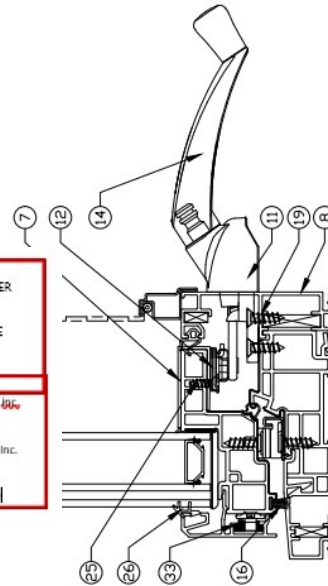
FENÊTRE À BATTANT (CASEMENT) 4 1/2"

MATERIAUX		
NO.	DESCRIPTION	NO. CAT.
20	VIS POUR PENTURES	TÊTE PLATE #7/10X5/8"
21	VIS POUR REDRESSEUR DE VOILET	TÊTE PLATE #7/10X5/8"
22	COUPE FROID	09187
23	VIS POUR GÂCHES	TÊTE PLATE #7/10 X1/2"
24	VIS POUR LOQUETS	TÊTE ÉVASÉ #10 X5/8"
25	VIS POUR SUPPORT DE COIN	TÊTE PLATE #8 X 1/2"
26	COUPE FROID	09185
27	GUIDE BARRÉ MULTI-POINT	
28	GÂCHE	
29	VIS POUR GUIDE BARRÉ MULTI-POINT RONDE #6 X 3/4"	
30	REDRESSEUR VOILET	6066B
31	REDRESSEUR VOILET EN NYLON	04562
33	COIN D'ASSEMBLAGE	07506
35	CALE	1055
36	RUBAN D'ÉTANCHÉITÉ	

MATERIAUX		
NO.	DESCRIPTION	NO. CAT.
1	CADRE	4902
2	VOILET	4618
4	VOILET EXTÉRIEUR	ALUMINIUM
6	EXTENSION CADRE OUVRANT	ALUMINIUM
7	RECOURVEMENT DE VOILET INTÉRIEUR	ALUMINIUM
8	CADRE OPÉRANT INTÉRIEUR	ALUMINIUM
11	OPÉRATEUR MAXIM DUAL ARM	
12	SUPPORT DE COIN	
14	MANIVELLE	
15	LOQUET	
16	COUPE FROID	SCHLEGEL FR-3630-187
18	CADRE DE MOUTOUQUAIRE 7/16"	
19	VIS POUR OPÉRATEUR	TÊTE PLATE #7/10X5/8"

CONFORME DOSSIER
TF-00124-A2
 COMPLIES TO FILE

UL Laboratory Canada Inc.
 2020-11-17
 VÉRIFIÉ / CHECKED



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**PERFORMANCE TESTING IN ACCORDANCE WITH
AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011), CSA A440S1-09 & CSA A440S1-17
AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS 2017) & CSA A440S1-19**

PRODUCT MANUFACTURER
EVERLAST GROUP OF COMPANIES (o/a EVERLAST, EVERLAST WEST AND ALBERTA VINYL WINDOWS AND DOORS) 299 Carlingview Dr. Etobicoke, ON M9W 5G3 416-241-8527

REPORT TF-00124-B2

TEST REPORT SUMMARY	
Product type	Awning Window
Product series/model	Altitude Awning – (Hybrid PVC/Aluminum – PVC core with interior/exterior aluminum)
Primary designator	Class CW – PG 70: Size tested 1525 x 1220 mm (~60.04 x 48.03 in) - Type AP
Optional secondary designator	Positive Design pressure (DP) = 3360 Pa (~70.18 psf) Negative design pressure (DP) = -3360 Pa (~-70.18 psf) Water penetration resistance test pressure = 720 Pa (~15.04 psf) Canadian air infiltration/ exfiltration level = A3 Level (NAFS-11) / Not applicable (NAFS-17)
Option(s)	None

See UL Laboratory Canada Inc. complete report TF-00124-B2 for test specimen description and detailed test results

Test laboratory location	UL Laboratory Canada Inc. (7 Underwriters Road, Toronto, ON, M1R 3A9)		
Test completion date	2020-11-04	Number of pages	7 pages & 1 appendix
Report date	2020-11-17	Revision date	-

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APPENDIX: DRAWINGS & BILL OF MATERIALS

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1.0 INTRODUCTION

UL Laboratory Canada Inc. was retained by " **EVERLAST GROUP OF COMPANIES (o/a EVERLAST, EVERLAST WEST AND ALBERTA VINYL WINDOWS AND DOORS)**" to test a fenestration product according to the performance levels in the *AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011) Standard and its Canadian supplements CSA A440S1-09 & CSA A440S1-17 and the AAMA/WDMA/CSA 101/I.S. 2/A440-17 (NAFS 2017) Standard and its Canadian supplement CSA A440S1:19*. The sample components and manufacturing are documented in section 2.0.

Note concerning the use of units of measurement in this report:

According to the *AAMA/WDMA/CSA 101/I.S.2/A440 Standard*, the use of SI (metric) units is the standard, while IP (Imperial) values given in parentheses are for reference purposes only, and are inexact rounded values. Section 5.0 contains testing results converted to IP units for the sake of convenience only. The only exception to using SI values is in the Performance Grade (PG) portion of the product designation.

Note concerning drawings:

The drawings reviewed for the production of this report are stamped and are on file at UL Laboratory Canada Inc. The availability of individual drawings will be at the discretion of the client.

2.0 DESCRIPTION OF THE SPECIMEN(S) TESTED

Model

Altitude Awning - (Hybrid PVC/Aluminum – PVC core with interior/exterior aluminum)

Product type

AP – (Awning, hopper, projected window)

Operation mode

Outswing opening

Drawings (Appendix)

Bill-of-Materials & Cross Sections

Drawings (Others)

ES18640, ES18637, ES18635, ES 18634

Date(s) of sample reception

2020-05-26, 2020-10-05

Date(s) of testing

2020-06-03, 2020-10-05, 2020-11-03, 2020-11-04

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Test specimen installation (test buck)

Material: Spruce, Pine Fir (SPF) (~2" x 8")

R.O. clearances: Head/Sill: 10 mm (0.39"), shimmed with (5) 6.35 mm (0.24") wood shims at 320 mm (12.60") C/C / Jambs: 13 mm (0.51") shimmed with (4) 6.35 mm (0.24") wood shims at 300 mm (11.81") C/C.

Fastening: Head/Sill: Fastened through (5) metal clips at 320 mm (12.60") C/C with (2) # 8 x 1-1/4" screws ea. / Jambs: Fastened through (4) metal clips at 300 mm (11.81") C/C with (2) # 8 x 1-1/4" screws ea.

Sealing detail: Exterior perimeter surface sealed with sealant.

Frame

Material: Hybrid PVC/Aluminum, extruded PVC core with interior and exterior extruded aluminium/ joints sealed with sealant.

Joinery type: Mitred corners, mechanically fastened (4) # 8 x 2-1/2" screws and sealed with foam tape per corner / Interior corners sealed with sealant.

Thermal Break: None.

Reinforcement: None.

Weatherstripping: Bulb with Fin (1 Row): T-slot, inner frame perimeter.

Sealant: Interior frame corners sealed with sealant / Rotary operator frame sealed with sealant / interior and exterior extruded aluminum and extruded PVC core joints surface sealed with sealant / Outer frame bulb weatherstrip corners sealed with sealant.

Drainage: Sloped sill / Notch: (1) 3.18 mm (0.125") long, bulb weatherstrip at sill, 25.4 mm (1") from the jamb.

Overall dimensions: 1525 mm (60.04") W x 1220 mm (48.03") H

Window Sash

Material: Hybrid PVC/ aluminum, extruded PVC core with exterior extruded aluminium and extruded aluminium interior cover.

Joinery type: Mitered corner, mechanically fastened with (1) # 8 x 2-1/2" screws and sealed with sealant per corner.

Thermal Break: None.

Reinforcement: None.

Weatherstripping: Bulb: (1 Row) Co-extruded, inner sash perimeter at extruded PVC core / Pile: (1 Row) Stiles and bottom rail, outer sash edge / Bulb: (1 Row) Top rail, outer sash edge.

Sealant: Interior sash corners sealed with sealant / Corner bead of sealant at inner glazing cavity corners.

Drainage: None.

Glazing: Double glazed sealed unit 30.16 mm (1.19"), laid-in glazed / Nominal glass thickness : Exterior: 4 mm (0.16") / Interior: 4 mm (0.16") / Air space gap: 22.0 mm (0.87") / Type of glass: Annealed with LowE / Type of spacer: XL Edge / Type of sealant: Dual-sealed / Type of filling gas: Argon / Glazing retention: Extruded Aluminum glazing stop, glazing cavity exterior perimeter, fastened with (1) #8 x 2-1/2" screws per corner / Glazing seals: Fin: Interior glazing cavity perimeter; Glazing tape: inner glazing cavity perimeter; Corner bead: inner glazing cavity; Glazing Spline: Outer glazing cavity perimeter / Grid description: None / Setting blocks: None / Daylight opening: 1385 mm (54.53") W x 1080 mm (42.52") H

Overall dimensions: 1474 mm (58.03") W x 1166 mm (45.91") H

Screen

Frame material: Rolled aluminium.

Mesh material: Fiberglass.

Anchoring method: Spring Loaded Pins: (2) Plastic, ends of the bottom rail, at corner keys / Anchoring Pins:

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(2) Plastic, ends of top rail, at corner keys.

Auxiliary parts: Corner Keys: (4) Plastic, one per corner.

Overall dimensions: 1405 mm (55.31") W x 1101 mm (43.35") H

Hardware

See *hardware description in the bill of materials. Part number and manufacturer/ supplier information for hardware components provided by the client.*

Multipoint lock: (1 per Jamb) Metal, lock jamb, 270 mm (10.63") from sill, fastened with (2) # 8 x 3/4" screws.

Tie Bar: (1 per Jamb) Metal, 1055 mm (41.54") length, lock jambs.

Tie Bar Guides: (4 per Tie Bar) Plastic, lock jamb, at 70 mm (2.76"), 450 mm (17.72"), 710 mm (27.95") and 1040 mm (40.94") from the sill, fastened with (3) # 9 x 1" screws ea.

Keepers: (2 per Stile) Plastic, stiles, at 140 mm (5.51") and 565 mm (22.24") from the bottom rail, fastened with (2) # 6 x 1/2" screws ea.

Snubbers: (3) Metal, head, at 80 mm (3.15"), 740 mm (29.13"), 1400 mm (55.12") from the right jamb (outside view), fastened with (2) # 6 x 1/2" screws ea.

Hinges: (2) Metal, stiles at top rail, fastened with (4) # 10 x 3/4" screws ea.

Rotary operator: (1) Metal, sill, center, fastened with (6) # 10 x 1" screws.

Operator track: (1) Metal, bottom rail, center, fastened with (6) # 10 x 3/4" screws.

3.0 ALTERATION(S)

Alteration(s) performed in the laboratory on tested specimen to meet the reported performances:

Water Penetration Test:

- Replaced pile weatherstrip at the top rail with bulb weatherstrip.
- Added one 3.18 mm (0.125") drain notch to the bulb weatherstrip at the sill, 25.4 mm (1") from the jamb.

4.0 TEST BENCH INFORMATION

Test bench identification: TB-AWS-08

The calibration of this test bench was done as per Article 9.0 of ASTM E283, *Standard Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors*, and ASTM E331 *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference* and ASTM E547 *Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Cycling Static Air Pressure Difference*. The last calibration of this test bench and related equipment was performed in October 2020.

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5.0 RESULTS OF PERFORMANCE TESTS

SPECIFICATIONS	TEST RESULTS
<p><u>Ease of operation test</u> Force to initiate motion: R – LC Classifications < 60 N (~13.49 lbf) CW-AW Classifications < 70 N (~15.74 lbf) Force to maintain motion: R – LC Classifications < 30 N (~6.74 lbf) CW-AW Classifications < 45 N (~10.12 lbf) Force to latch < 100 N (~22.48 lbf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.1. A440S1-09 & A440S1-17 Canadian Supplements par. 5.2 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.1. A440S1-19 Supplément Canadien par. 5.3 ASTM-E2068-00 (2008)</p>	<p>Passed</p> <p>CW Classification</p> <p>Measured to initiate = 17.79 N (~4 lbf) Measured to maintain = 17.79 N (~4 lbf) Measured to latch = 31.14 N (~7 lbf)</p>
<p><u>U.S. Air Leakage Resistance Test</u> R – LC – CW Classifications: $Q_{inf} \leq 1.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.3 cfm/ft² @ 1.57 psf) AW Classification: $Q_{inf} \leq 0.5 \text{ l/s-m}^2 @ 300 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 6.27 psf)</p> <p><u>Canadian air infiltration/exfiltration levels</u> R – LC – CW Classifications: A2: $Q \leq 1.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.3 cfm/ft² @ 1.57 psf) A3: $Q \leq 0.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 1.57 psf) AW Classification: A2: $Q \leq 0.5 \text{ l/s-m}^2 @ 300 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 6.27 psf) A3: $Q \leq 0.5 \text{ l/s-m}^2 @ 300 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 6.27 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.2 A440S1-09 & A440S1-17 Canadian Supplements par. 5.3 ASTM-E283-04 (2012)</p>	<p>Class CW – U.S. Requirements (NAFS-11)</p> <p>A3 Level –Canadian Requirements (NAFS-11)</p> <p>Surface: 1.86 m² (~20.03 ft²)</p> <p>$Q_{inf} = 0.17 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~0.03 cfm/ft² @ 1.57 psf) $Q_{exf} = 0.26 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~0.05 cfm/ft² @ 1.57 psf)</p>
<p><u>Air Leakage Resistance Test</u> R – LC Classifications: $Q_{inf} \leq 1.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.3 cfm/ft² @ 1.57 psf)</p> <p>Canadian air infiltration/exfiltration levels: A2: $Q \leq 1.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.3 cfm/ft² @ 1.57 psf) A3: $Q \leq 0.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 1.57 psf) CW Classification: $Q \leq 0.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 1.57 psf) AW Classification: $Q_{inf} \leq 0.5 \text{ l/s-m}^2 @ 300 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 6.27 psf) $Q_{exf} \leq 0.5 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~ ≤ 0.1 cfm/ft² @ 1.57 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.2 A440S1-19 Canadian Supplement par. 5.4 ASTM-E283-04 (2012)</p>	<p>Class CW – Passed (NAFS-17)</p> <p>Surface: 1.86 m² (~20.03 ft²)</p> <p>$Q_{inf} = 0.17 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~0.03 cfm/ft² @ 1.57 psf) $Q_{exf} = 0.26 \text{ l/s-m}^2 @ 75 \text{ Pa}$ (~0.05 cfm/ft² @ 1.57 psf)</p>

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SPECIFICATIONS	TEST RESULTS
<p><u>Water Resistance Test</u> No water infiltration under a minimum pressure differential: Designation LW: 0 Pa (0 psf) Class R: 140 Pa (~2.92 psf) Class LC: 180 Pa (~3.76 psf) Class CW: 220 Pa (~4.59 psf) Class AW: 390 Pa (~8.15 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.3. A440S1-09 & A440S1-17 Canadian Supplements par. 5.4 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.2 A440S1-19 Canadian Supplement par. 5.5</p> <p>Classes R, LC & CW: ASTM-E547-00 (2009 & 2016) Class AW: ASTM-E547-00 (2009 & 2016) & ASTM-E331-00 (2009 & 2016)</p>	<p>Class CW – U.S. & Canadian Requirements</p> <p>No water infiltration under the minimum test pressure for the Class.</p> <p>No water infiltration at an optional test pressure differential of:</p> <p>220 Pa (~ 4.59 psf) - U.S. & Canadian Requirements</p> <p>580 Pa (~12.11 psf)- U.S. & Canadian Requirements</p> <p>720 Pa (~15.04 psf) - Canadian requirements only</p>
<p><u>Uniform Load Deflection Test</u> Member deflection at a minimum design pressure (DP) and at optional DP: Class R: 720 Pa (~15.04 psf) – Reported only Class LC: 1200 Pa (~25.06 psf) – Reported only Class CW: Limited to L/175 at 1440 Pa (~30.08 psf) Class AW: Limited to L/175 at 1920 Pa (~40.10 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.4 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.4 ASTM-E330-02 (2010) & ASTM-E330-14</p>	<p>DP 70 – Class CW</p> <p>Net deflection measured on the left stile (Gateway): 1.69 mm @ -1440 Pa (~0.07" @ -30.08 psf) 1.73 mm @ +1440 Pa (~0.07" @ +30.08 psf)</p> <p>Net deflection measured on the right stile (Gateway): 1.16 mm @ -1440 Pa (~0.05" @ -30.08 psf) 1.18 mm @ +1440 Pa (~0.05" @ +30.08 psf)</p> <p>Net deflection measured on the left stile (DP 70): 2.94 mm @ -3360 Pa (~0.12" @ -70.18 psf) 3.09 mm @ +3360 Pa (~0.12" @ +70.18 psf)</p> <p>Net deflection measured on the right stile (DP 70): 2.48 mm @ -3360 Pa (~0.10" @ -70.18 psf) 2.44 mm @ +3360 Pa (~0.10" @ +70.18 psf)</p> <p>Allowed ≤ 6.22 mm (~0.24")</p>

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SPECIFICATIONS	TEST RESULTS
<p>Uniform Load Structural Permanent deformation is limited at a minimum structural test pressure (STP) and at optional STP of: Class R: ≤ 0.4% (L) at 1080 Pa (~22.56 psf) Class LC: ≤ 0.4% (L) at 1800 Pa (~37.59 psf) Class CW: ≤ 0.3% (L) at 2160 Pa (~45.11 psf) Class AW: ≤ 0.2% (L) at 2880 Pa (~60.15 psf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.4 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.4 ASTM-E330-02 (2010) & ASTM-E330-14</p>	<p>STP 70 – Class CW</p> <p>Permanent deformation measured on the left stile (Gateway): 0.26 mm @ -2160 Pa (~0.01" @ -45.11 psf) 0.02 mm @ +2160 Pa (~0.00" @ +45.11 psf)</p> <p>Permanent deformation measured on the right stile (Gateway): 0.25 mm @ -2160 Pa (~0.01" @ -45.11 psf) 0.09 mm @ +2160 Pa (~0.00" @ +45.11 psf)</p> <p>Permanent deformation measured on the left stile (STP 70): 0.38 mm @ -5040 Pa (~0.01" @ -105.26 psf) 0.17 mm @ +5040 Pa (~0.01" @ +105.26 psf)</p> <p>Permanent deformation measured on the right stile (STP 70): 0.37 mm @ -5040 Pa (~0.01" @ -105.26 psf) 0.27 mm @ +5040 Pa (~0.01" @ +105.26 psf)</p> <p>Allowed ≤ 3.27 mm (~0.13")</p>
<p>Forced-Entry Resistance All windows shall be tested according to ASTM F588-07 & ASTM F588-14 Grade 10.</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.5 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.5</p>	<p>Passed</p> <p>Grade 40</p> <p>T₁=10 min., L₁=1334 N (~300 lbf), L₂=667 N (~150 lbf) & L₃=267 N (~60 lbf)</p>
<p>Awning, Hopper, Projected Hardware load Test Deflection of the of the sash corner opposite the blocking under a load while blocked at 45° or the limit of its travel.</p> <p>Classes R & LC: Reported only for a load of 70 N (~15.74 lbf) Class CW: 38.3(A) (where A is Sash area in m²) under a load of 140 N (~31.47lbf)</p> <p>AAMA/WDMA/CSA 101/I.S.2/A440-11 par. 9.3.6.5.5 AAMA/WDMA/CSA 101/I.S.2/A440-17 par. 9.3.6.5.5</p>	<p>Passed</p> <p>Class CW</p> <p>Deflection under a load of 140 N (~31.47 lbf): Allowed deflection = 65.81 mm (2.59") Measured deflection = 1.07 mm (0.04")</p>
<p>Insect Screen Test Canadian (only) requirements: Insect screens shall be tested in accordance with ASTM E1748-95(09) in the outward direction only under a load of 60 N (~13 lbf).</p> <p>A440S1-09 & A440S1-17 Canadian Supplements par. 5.1 A440S1-19 Canadian Supplement par. 5.2</p>	<p>Passed</p> <p>No screen disengagement or permanent deformation observed.</p>

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6.0 CONCLUSION

The fenestration product described in this report was tested in accordance with the *AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011) Standard and its Canadian supplements CSA A440S1-09 & CSA A440S1-17 and the AAMA/WDMA/CSA 101/I.S. 2/A440-17 (NAFS 2017) Standard and its Canadian supplement CSA A440S1:19*, regarding performance testing. The above results were secured by using the designated test methods and the performance requirements of the referenced specification.

Detailed assembly drawings showing wall thickness of all members, corner construction and hardware application are on file and have been compared to the sample submitted.

The test records from this evaluation will be retained for a minimum of four (4) years from the date of report issuance. This report does not constitute certification of this product, which may only be granted by a certification agency.

Note on the Limitation of Liability:

Due care was taken in performing the testing sequence and in reporting the results related to the test specimen received for evaluation. Through acceptance of this report, the Client agrees to exempt UL Laboratory Canada Inc. employees and owners from all liability claims and demands arising from any matter related to or concerning the quality and execution of the performance evaluation contained in this report. The Decision Rule is based on Simple Acceptance (Measurement Uncertainty is not taken into account when making a statement of conformity).

7.0 REVISION LOG

Rev. #	Date	Page(s)	Revision(s)
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**APPENDIX
DRAWINGS & BILL OF MATERIALS**

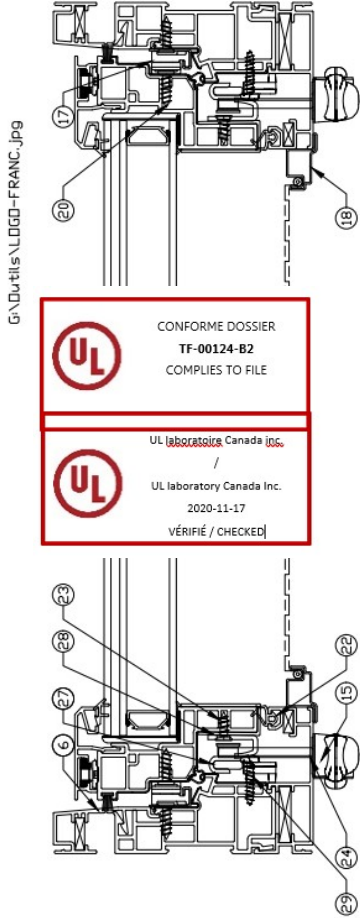
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ALTITUDE+ AWNING			
BOM			
DIE / PART NO.	DESCRIPTION	SUPPLIER	
ES18640	INSIDE CM FRAME	CANART	
ES18637	EXTERIOR OPERATING FRAME		
ES18635	EXTERIOR OPERATING SASH		
ES18634	INTERIOR OPERATING SASH		
ES18639	INSIDE FIXED FRAME		
XS18641	COUPLER		
ES18636	EXTERIOR FIXED FRAME		
ES18638	ALUMINUM GLASS TOP		
ES18647	LARGE CORNER KEY		
ES18648	MEDIUM / SMALL CORNER KEY		
ES19778	NAIL FIN		
ES18638	ALUMINUM GLASS TOP		
L4902	FIXED/OPERATING FRAME THERMO BREAK		ENERG
L4618	OPERATING SASH THERMO BREAK		
Q9185	OPERATING SASH GLAZING WEATHERSTRIP		
Q9187	OPERATING FRAME WEATHERSTRIP		
C011-0403-085	NARROW AWNING OPERATOR	INTERLOCK HARDWARE	
C011-0635/0635-000	Handle and Cover (A/B) LH White		
C011-0702	Track Assembly Facemount (Large Dual)		
CH02-0109-085	18" Awning Hinge Arm-LH Powder Coat		
CH02-0110-085	18" Awning Hinge Arm-RH Powder Coat		
CH02-0201	13" Hinge Track LH Stainless Steel		
CH02-0202	13" Hinge Track RH Stainless Steel		
CL01-0069-085 to CL01-0081-085	TIE BAR		
C011-0510	AWNING BRACKET SS		
CL02-2035-00B	Guide BLACK		
CL02-2030-00B	Strike BLACK		
CL03-0227-00B	Retainer (Commercial Window)		
CL03-0937-000	MP Handle Powder Coat, WHITE		
51	BULB SEAL FOR FIXED FRAME		ELTON
497	ALUMINUM GLASS STOP GASKET		
508	FIXED WINDOW SETTING BLOCK		
176	SHIM SITTING BLOCK FOR OPERATING SASH		
RIN1905	ALTITUDE SNUBBER	S.I.L.	
CENTER KEY	ALTITUDE CENTER KEY		
WC92L	WEEP COVER (MUST SPECIFY COLOUR)		
FIXED GASKET BL	FIXED CORNER GASKET BLACK		
CASEMENT GASKET BL	CM CORNER GASKET BLACK		
FIXED GASKET WT	FIXED CORNER GASKET WHITE		
CASEMENT GASKET WT	CM CORNER GASKET WHITE		
RIN1905	LARGE CORNER KEYS (CanArt Die# ES18647)	DEMAR	
CENTER KEY	SMALL CORNER KEYS (CanArt Die# ES18648)		
PB9235-187	WEATHER STRIP (BLACK)	SCHLEGL CANADA	
7506.S / 500	SASH CORNER KEY	N.A.P.	
CGS-1154.1.150	MULL PLATES	SPEC TOOLS	
CTM-1450	INSTALL CLIPS		
GL-NO708000 OP	GLAZING TAPE 1/8	Echo Tape	
4583	BLACK SILICONE (CARTRIDGE)	ADFAST	
4551	CLEAR SILICONE (CARTRIDGE)		
4551/5	CLEAR SILICONE (SAUSAGE) (THERMOBREAK)		
STKFS61203	SELF TAPPING (6 X 1/2 FOR STRIKERS & INSTALL CLIPS)	HOLD TITE	
SWDFSU710341883	STAINLESS STEEL SCREWS #10- 12 X 3/4 FOR HINGES		
STPPQ8203	#8 - 15 X 2 (SASH ASSEMBLY)		
STPPQ821203	#8 - 15 X 2 1/2 (FOR FRAME ASSEMBLY)		
STCFPF8344103	#8 - 32 X 3/4 (MP LOCK)		
STFSU7109161883	STAINLESS STEEL #10 - 12 X 9/16(FOR SNUBBERS)		
STSP55803	#6 X 5/8 (FOR WOOD ON INSTALL BRACKET)		
SWDFQD611403	#6 - 13 X 1 1/4 FOW WOOD CORNERS		
STCFQN178103	#8 - 10 X 1 (FOR OPERATOR)		
SSAPLES1814118L	#14 1/4 CROWN X 1 1/8 LONG 18 GAUGE (STAPLES)		
3/4" screw	.63" PHP screws for lock handle	INTERLOCK HARDWARE	



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ALTITUDE MEC



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CONFORME DOSSIER
TF-00124-B2
COMPLIES TO FILE



UL Laboratories Canada Inc.
/
UL Laboratory Canada Inc.
2020-11-17
VÉRIFIÉ / CHECKED

FENÊTRE À AUVENT (AWNING) 4 1/2"

MATERIAUX	
NO.	DESCRIPTION
20	VIS POUR PENTURES TÊTE PLATE #7/10x5/8
21	VIS POUR REDRESSEUR DE VOILET TÊTE PLATE #7/10x5/8
22	COUPE FROID 09187
23	VIS POUR GÂCHES TÊTE PLATE #7/10 X1/2
24	VIS POUR LOQUETS TÊTE ÉVASÉ #10 X5/8"
25	VIS POUR RAIL D'OPÉRATEUR TÊTE PLATE #7/10x5/8
26	COUPE FROID EVERLAST 066
28	GÂCHE
29	VIS POUR GUIDE BARRE MULTI-POINTE RONDE #6 X 3/4"
30	RUBAN D'ÉTANCHÉITE

MATERIAUX	
NO.	DESCRIPTION
1	CADRE 4902
2	VOILET 4618
3	REDRESSEUR VOILET ALUMINIUM 60668
4	VOILET EXTÉRIEUR ALUMINIUM 04562
5	REDRESSEUR VOILET EN NYLON ALUMINIUM 04562
6	EXTENSION CADRE OUVRANT ALUMINIUM
7	RECOURVEMENT DE VOILET INTÉRIEUR ALUMINIUM
8	CADRE OPÉRANT INTÉRIEUR ALUMINIUM
9	COIN D'ASSEMBLAGE 07506
10	CALE 1055
11	OPÉRATEUR MAXIM AUVENT
12	SUPPORT DE COIN
13	RAIL D'OPÉRATEUR
14	MANIVELLE
15	LOQUET
16	COUPE FROID SCHLEGEL PE-853-187
17	PENTURES
18	CADRE DE MOUSTIQUE 7/16"
19	VIS POUR OPÉRATEUR TÊTE PLATE #7/10x5/8

SCHEMIS N.12. ACADY ASS-ALUWING DATE: 17-07-2018

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CLEB

**PERFORMANCE TESTING IN ACCORDANCE WITH
AAMA/WDMA/CSA 101/I.S.2/A440-08 (NAFS-08) & A440S1-09
AAMA/WDMA/CSA 101/I.S.2/A440-11 (NAFS 2011)**

Product Manufacturer: ENERGI FENESTRATION SOLUTIONS
3035, LE CORBUSIER BLVD
LAVAL, QUÉBEC
H7L 4C3
450-687-5115

Report no.: AI-04575-C1

Product type: Aluminum fixed window

Product series/model: Altitude Mec

TEST REPORT SUMMARY

Primary product designator	Class CW – PG65 : Size tested 1829 x 1829 mm (~ 72 x 72 in) - Type FW
Optional secondary designator	Positive Design pressure (DP) = 3120 Pa (~65 psf) Negative design pressure (DP) = -3120 Pa (~-65 psf) Water penetration resistance test pressure = 730 Pa (~15.00 psf) Canadian air infiltration / exfiltration level = Fixed Level
CAN/CSA A440-00 ratings	Fixed / B7 / C4

See CLEB laboratory Inc. complete report AI-04575-C1 for test specimen description and detailed test results

Test completion date: 2016-08-11

Report date: 2016-09-06

Revision date: -

Number of pages: 6 pages & 1 appendix

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