



Testing Evaluation Laboratories, Inc.

2002 Wood Court Suite 1 – Plant City, FL 33563

Phone: 813-754-9887

**AAMA/WDMA/CSA 101/I.S.2/A440-08
Canadian Supplement A440S1-09**

TEST REPORT SUMMARY

Test Report Issued To:

**FLEETWOOD WINDOWS AND DOORS
1 Fleetwood Way
Corona, CA 92879**

KONA 3800 Non-Impact Aluminum Awning Window

Title	Summary of Results
Primary Product Designator	Class LC- PG65 1651 x 1067 (65 x 42) Type AP
Design Pressure	+3112/-3112 Pa (+65.0/- 65.0 psf)
Operating Force	See Report #TEL 01990817 for these results.
Air Infiltration	See Report #TEL 01990817 for these results.
Air Infiltration/Exfiltration (A440S1-09)	See Report #TEL 01990817 for these results.
Water Resistance	See Report #TEL 01990817 for these results.
Structural Test Pressure	+4668/-4668 Pa (+97.5/- 97.5 psf)
Forced Entry	No Entry

Reference should be made to Report No. TEL 01991028 for complete test results for AAMA/WDMA/CSA 101/I.S.2/A440-08.

For Testing Evaluation Laboratories, Inc.

**Vivian K. Wright,
President**



Testing Evaluation Laboratories, Inc.

2002 Wood Court Suite 1 – Plant City, FL 33563

Phone: 813-754-9887

**AAMA/WDMA/CSA 101/I.S.2/A440-08
Canadian Supplement A440S1-09**

Issued to:

**FLEETWOOD WINDOWS AND DOORS
1 Fleetwood Way
Corona, CA 92879**

IAS Lab Certification Number: TL-299

**Report No: TEL 01991028
Test Dates: April 17, 2014
Report Date: April 30, 2014**

Project Summary: Testing Evaluation Laboratories, Inc. (TEL) was contracted by Fleetwood Windows and Doors to perform tests on the Kona 3800 Casement and Awning Windows at TEL's Plant City, FL test facility. Performance Grade Class LC-PG65 1651 x 1067 (65 x 42) Type AP was successfully achieved by this specimen.

Test specimen descriptions and results are reported herein.

Test Specifications: The test specimens were evaluated in accordance with the following:

***AAMA/WDMA/CSA 101/I.S.2/A440-08 and Canadian Supplement A440S1-09
Standard Specification for Windows, Doors and Unit Skylights***

Test Specimen Description:

Series / Model: Kona 3800 Casement and Awning Windows
Type: Aluminum Awning Window
Overall Size: 1651 mm x 1067 mm (65.00" x 42.00") – (X)
Daylight Opening: 1438 mm x 861 mm (56.63" x 33.88") – (X)
Glazing Detail: See attached drawing numbers L-7033A for glazing details.
Frame Material: Aluminum
Finish: Mill Finish

For Tested Elevation, Vertical Cross Sections, Horizontal Cross Sections, Components, Frame Anchoring, Glazing Detail and Bill of Materials See Attached Drawing number L-7033A.

Test Results: Specimen 1 – Class LC-PG65 1651 x 1067 (65 x 42) Type AP - Aluminum Awning Window (X)

The test results are tabulated as follows:

<u>Paragraph</u>	<u>Title of Test – Test Method</u>	<u>Results</u>	<u>Allowed</u>
5.3.1	Operating Force per ASTM E2068-00	(See Report #TEL 01990817 for these results.)	
5.3.2.1	Air Infiltration per ASTM E283	(See Report #TEL 01990817 for these results.)	
Note #1:	<i>The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440-08 (A440S1-09) for air infiltration/exfiltration.</i>		
5.3.3.2	Water Resistance per ASTM E547		See Note #2
5.3.4.2	Uniform Load Structural per ASTM E330		See Note #2
Note #2:	<i>The client opted to start at a pressure higher than the minimum required. Those results are listed under "Optional Performance".</i>		
5.3.5	Forced Entry resistance per ASTM F588 Type B Grade 10 Disassembly Test Test B1 – B3 Sash/Panel Manipulation Test Lock Manipulation Test	No Entry No Entry No Entry No Entry	No Entry No Entry No Entry No Entry
5.3.6.6.6	Awning, Hopper, Projected Hardware Load Test 70N (15 lbf)	(See Report #TEL 01990817 for these results.)	

Optional Performance

4.3.2.1	Water Resistance per ASTM E547	(See Report #TEL 01990817 for these results.)
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4.4.2.6 Uniform Structural Loads

Range	Time (seconds)	Load Pa (psf)	Location	Deflection mm (in.)	Allowable mm (in.)
Half Test Positive	30	1556 (32.50)			
Test Positive	30	3112 (65.00)	1	0.076 (0.003)	See Note #3
Half Test Negative	30	1556 (32.50)			
Test Negative	30	3112 (65.00)	1	0.305 (0.012)	See Note #3

Note #3: *The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440-08 (A440S1-09) for this product designation. The deflection data is recorded in this report for special code compliance and information only. See Note #4 for deflection locations.*

Specimen 1: Optional Performance – Continued

4.4.2.6 Uniform Structural Loads

Range	Time (seconds)	Load Pa (psf)	Location	Deflection mm(in.)	Set mm(in.)	Allowable mm(in.)
Half Proof Positive	10	2334 (48.75)				
Proof Positive	30	4668 (97.50)	1	0.102 (0.004)	0.000 (0.000)	5.791 (0.228)
Half Proof Negative	10	2334 (48.75)				
Proof Negative	30	4668 (97.50)	1	0.330 (0.013)	0.102 (0.004)	5.791 (0.228)

Note #4: Deflection/Set for Location 1 measured at center of cam lock.

Conditions, Terms, and General Notes Regarding These Tests

The product tested Has Been compared to the detailed drawing, bill of materials and fabrication information supplied by the client so named herein. Our analysis, which includes dimensional and component description comparisons, indicate the tested product and engineering information supplied by the client "Are Equivalent". The report and representative samples will be retained for four years from the date of initial test.

These test results were obtained by employing all requirements of the designated test methods with no Deviations unless explicitly noted in test report. The test results and specimen supplied for testing are in compliance with the reference.

The test results are specific to the product tested by this laboratory and of the sample supplied by the client named herein, and they relate to no other product either manufactured by the client, a fabricator of the client or of the client or of installed field performance.

This test report does not constitute certification of this product, but only that the above test results were obtained using the designated test methods and they indicate compliance with the performance requirements (paragraphs as listed) of the above referenced specifications.

Testing Evaluation Laboratories, Inc. makes no opinions or endorsements regarding this product and its performance. This report may not be reproduced or quoted in partial form without the expressed written approval of Testing Evaluation Laboratories, Inc.

Testing Evaluation Laboratories, Inc.'s letter, reports, its name or insignia or mark are for the exclusive use of the client so named herein and any other use is strictly prohibited. The report, letters and the name of Testing Evaluation Laboratories, Inc., its seal or mark shall not be used in any circumstance to the general public or in any advertising.

Limitation of liability: Due diligence was used in performing the tests and reporting the results. By acceptance of this report, this client agrees to hold harmless and indemnify Testing Evaluation Laboratories, Inc., its employees, subcontractors and officers and owners against all claims and demands of any kind whatsoever, which arise out of or in any manner connected with the performance of work referred to herein.

Testing Evaluation Laboratories, Inc.



Vivian K. Wright,
President

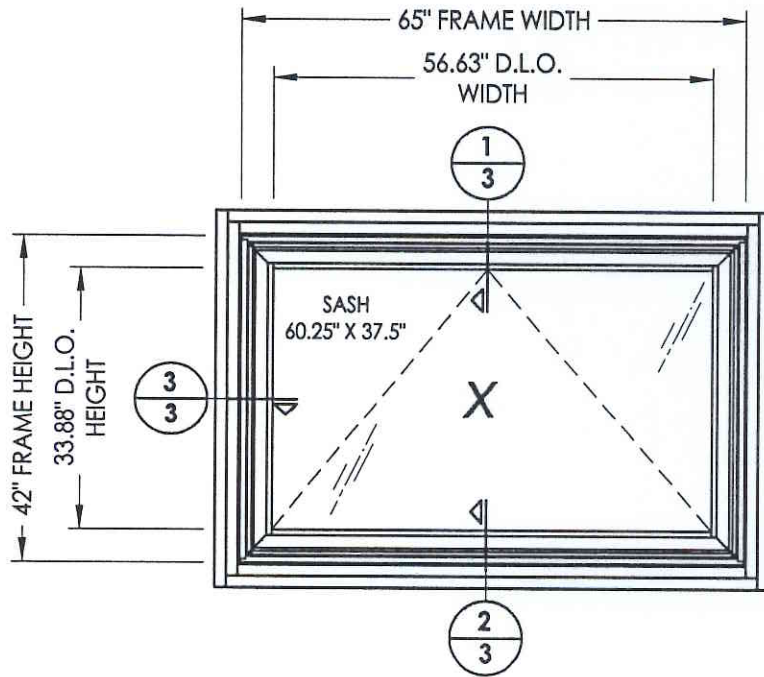
Revision Log

Rev No.	Date	Page(s)	Revision(s)
0	4/30/2014	NA	Original Report Issue


TABLE OF CONTENTS	
SHEET #	DESCRIPTION
1	Table of contents
2	Test elevation
3	Horizontal and vertical cross sections
4	Frame anchoring
5	Components and glazing details
6	Bill of materials

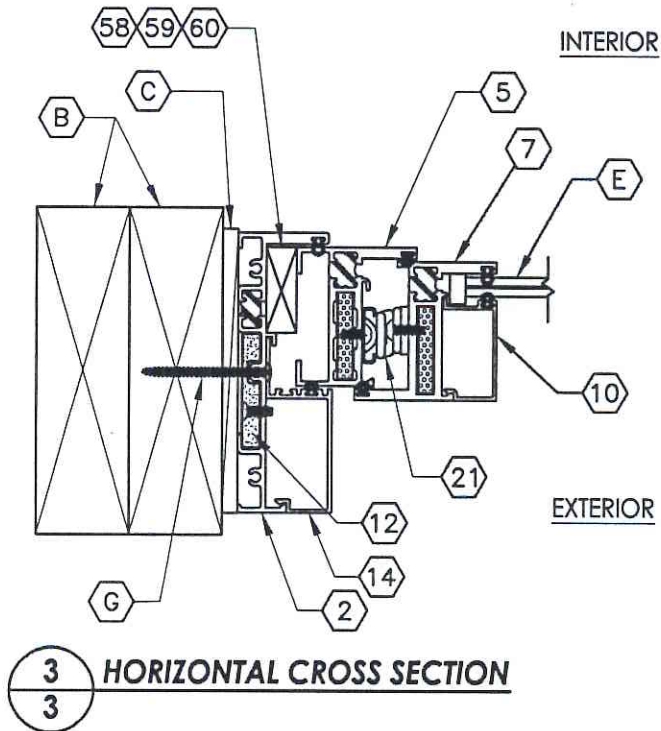
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted. TEL # 01991028
 Date 4/30/14 Verified by *WJW*

PRODUCT:		FLEETWOOD KONA 3800 AWNING WINDOW
PART OR ASSEMBLY:		TABLE OF CONTENTS
NO.		BY
DATE		REVISIONS
		
DATE: 4/23/14		
SCALE: N.T.S.		
DWG. BY: JK		
CHK. BY: LFS		
DRAWING NO.: L-7033A		
SHEET 1 OF 6		



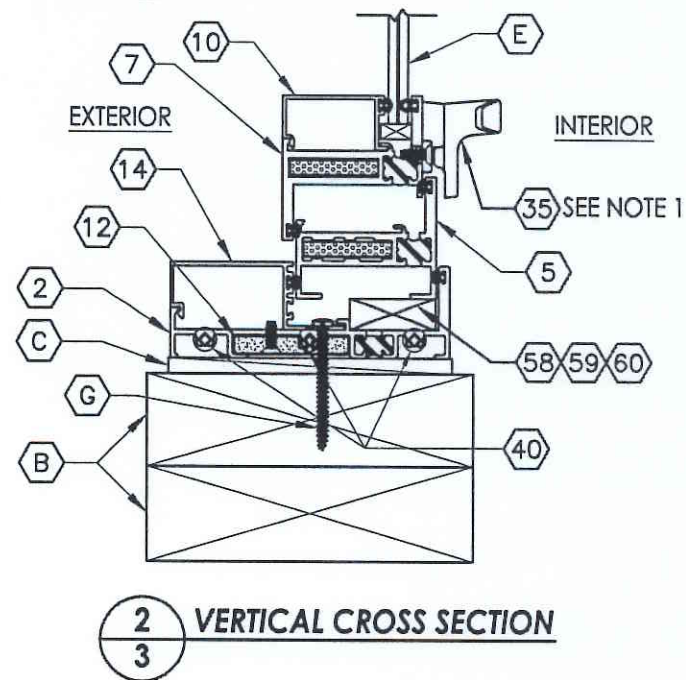
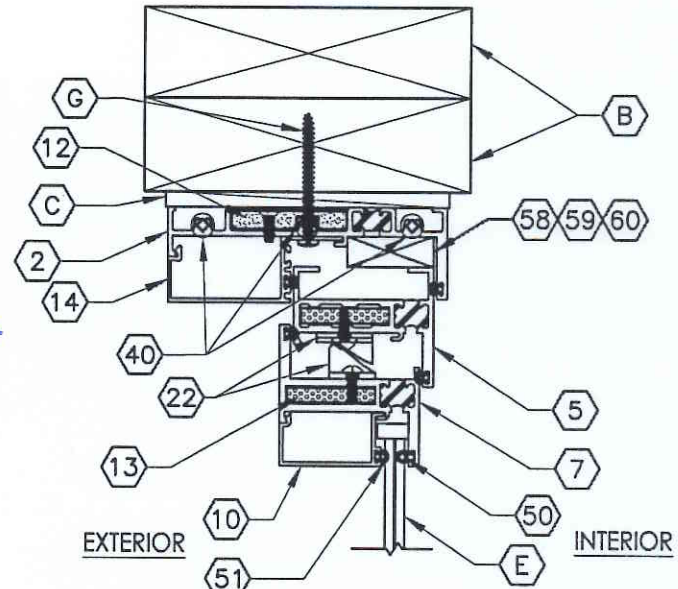
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted TEL # 0199 1028
 Date 4/30/14 Verified by *WJes*

PRODUCT: FLEETWOOD KONA 3800 AWNING WINDOW		PART OR ASSEMBLY: TEST ELEVATION	
NO.	DATE	REVISIONS	BY
			
DATE: 4/23/14			
SCALE: N.T.S.			
DWG. BY: JK			
CHK. BY: LFS			
DRAWING NO.: L-7033A			
SHEET 2 OF 6			

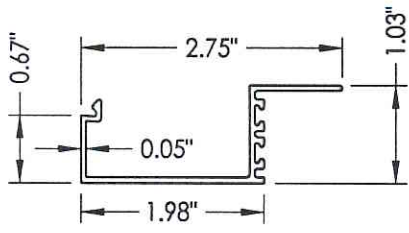


NOTE:
1. Item #35 located 17"
from each end (2) total.

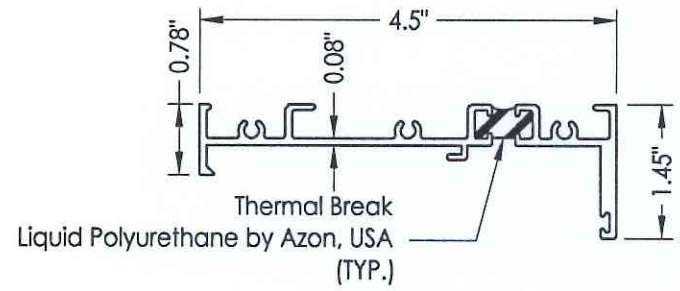
Testing Evaluation Laboratories Inc
Specimen Complies with Drawing
Deviations Noted TEL: 01991028
Date 4/30/14 verified by vlee



PRODUCT: FLEETWOOD KONA 3800 AWNING WINDOW		PART OR ASSEMBLY: HORIZONTAL AND VERTICAL CROSS SECTIONS	
NO.	DATE	BY	REVISIONS
 RW BUILDING CONSULTANTS, INC. 813.659.9197			
DATE: 4/23/14			
SCALE: N.T.S.			
DWG. BY: JK			
CHK. BY: LFS			
DRAWING NO.: L-7033A			
SHEET 3 OF 6			

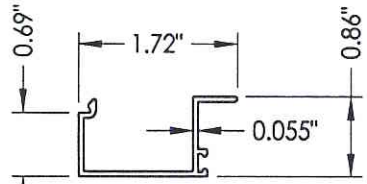


14 INSERT STOP

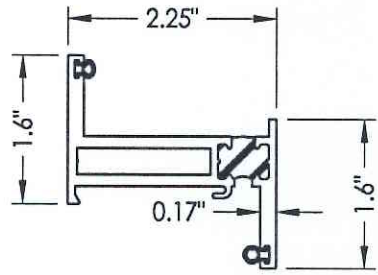


2 KONA BLOCK FRAME

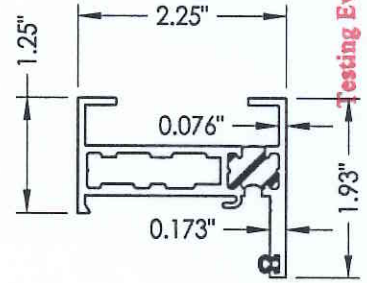
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 0199 1028
 Date 4/30/14 Verified by WLU



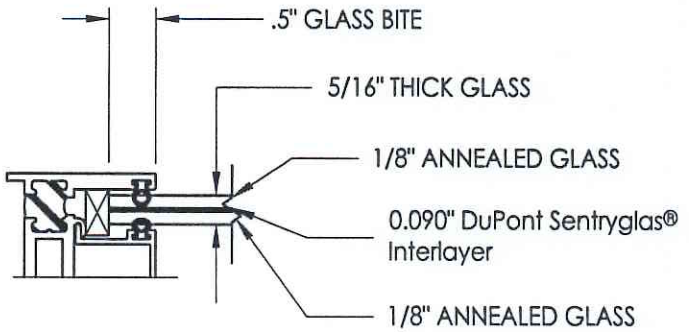
10 GLASS STOP 5/16", 7/16"



7 ZEE BAR (PANEL)



5 BLOCK FRAME




E GLAZING DETAIL

PRODUCT:		FLEETWOOD KONA 3800 AWNING WINDOW	
PART OR ASSEMBLY:		COMPONENTS	
NO.	DATE	REVISIONS	BY
DATE: 4/23/14			
SCALE: N.T.S.			
DWG. BY: JK			
CHK. BY: LFS			
DRAWING NO.: L-7033A			
SHEET 5 OF 6			

BILL OF MATERIALS		
ITEM #	DESCRIPTION	MATERIAL
B	2X BUCK SG >= 0.55	WOOD
C	1/4" MAX. SHIM SPACE	-
G	#10 x 2" PPH WOOD SCREW	STEEL
2	KONA BLOCK FRAME	6063-T6 ALUM
5	WESTWOOD BLOCK FRAME	6063-T6 ALUM
7	WESTWOOD ZEE BAR (PANEL)	6063-T6 ALUM
10	GLASS STOP (5/16", 7/16")	6063-T6 ALUM
12	SHEAR BLOCK	ALUM
13	CORNER KEY	ALUM
14	INSERT STOP	6063-T6 ALUM
21	4 BAR HINGE	SS
22	SNUBBER-COMMERCIAL PULL-IN BLOCK	SS
35	CAM HANDLE / STRIKE PLATE	SS
40	#10 X 1" PPH SMS	STEEL
46	SCREW NO 8, FHP, .750"	STEEL
50	BULB VINYL (EPDM 70 DUROMETER)-TREMCO	-
51	MINI BULB VINYL(EPDM 70 DUROMETER)-TREMCO	-
58	WOOD BLOCK .50" X 1.250"	-
59	ALUMINUM BLOCK .50" X 1.250"	-
60	PVC BLOCK .50" X 1.250"	-
61	SETTING BLOCK 4" x 1/8" x 1"	-

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted TEL # 01991028
 Date 4/23/14 verified by *elife*

PRODUCT: FLEETWOOD KONA 3800 AWNING WINDOW	PART OR ASSEMBLY: BILL OF MATERIALS																					
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