TEST REPORT

Report No.: D6385.01-301-47

Rendered to:

CR Laurence Co., Inc.
Vernon, California

PRODUCT TYPE: Architectural Terrace Door (Out-Swing)
SERIES/MODEL: 900

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights.*

Title	Summary of Results
Primary Product Designator	Class AW – PG80: Size Tested 1223 x 2440 mm (48-5/32 x 96-1/16 in.) – Type ATD
Design Pressure	±3840 Pa (±80.20 psf)
Air Infiltration	0.2 L/s/m^2 (0.04 cfm/ft^2)
Water Penetration Resistance Test Pressure	580 Pa (12.11 psf)

Test Completion Date: 08/18/2014

Reference must be made to Report No. D6385.01-301-47, dated 10/03/14 for complete test specimen description and detailed test results.

1.0 Report Issued To: CR Laurence Co., Inc.
2100 East 38th Street
Vernon, California 90058

2.0 Test Laboratory: Architectural Testing, Inc.
4 Rancho Circle
Lake Forest, California 92630
949-460-9600

3.0 Project Summary:

3.1 Product Type: Architectural Terrace Door (Out-Swing)

3.2 Series/Model: 900

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods. The specimen tested successfully met the performance requirements for a **Class AW – PG80: Size Tested 1223 x 2440 mm (48-5/32 x 96-1/16 in.) – Type ATD** rating.

3.4 Test Dates: 08/14/2014-08/18/2014

3.5 Test Location: C.R. Laurence's test facility in Los Angeles, California. Calibration of test equipment was performed by Architectural Testing in accordance with AAMA 205-01 "In-Plant Testing Guidelines for Manufacturers and Independent Laboratories".

3.6 Test Sample Source: The test specimen was provided by the client. Representative samples of the test specimen will be retained by Architectural Testing for a minimum of four years from the test completion date.

3.7 Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimens reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

3.8 List of Official Observers:

Name	Company
Marco Ramirez	CR Laurence Co., Inc.
Jarod S. Hardman	Architectural Testing, Inc.

4.0 Test Specifications:

AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights.*

AAMA 910-10, *Voluntary "Life Cycle" Specifications and Test Methods for AW Class Architectural Windows and Doors.*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 2.84 m^2 (30.60 ft^2)	**Width**		**Height**	
	millimeters	**inches**	**millimeters**	**inches**
Overall size	1223	48-5/32	2440	96-1/16
Leaf	1185	46-21/32	2399	94-7/16

5.2 Frame Construction:

Frame Member	**Material**	**Description**
Threshold	Thermally broken aluminum	Union of Die #H-61266 and Die #H-61267 with thermal break Die #279300.
Head	Thermally broken aluminum	Union of Die #H-61266 and Die #H-61265 with thermal break Die #279300.
Jambs	Thermally broken aluminum	Union of Die #H-61264 and Die #H-61263 with thermal break Die #279300.

	Joinery Type	**Detail**
All corners	Coped	Secured through jamb at each corner into screw boss with two #12 x 1" Hex head screws, and then corner joint is capped with 2" x 2" x 4-1/2" corner cap 1/32" thick is silicone sealed over the corner joint.

5.0 Test Specimen Description: (Continued)

5.3 Leaf Construction:

Leaf Member	Material	Description
Top rail, bottom rail, stiles	Thermally broken aluminum	Union of Die #H-61273 and Die #H-61272 with thermal break Die #279300.

	Joinery Type	Detail
All corners	Mitered	Secured at corners with aluminum corner key, Die #H80000, that is secured to rails and stiles with three dimples in the aluminum to retain the key.

5.4 Weatherstripping:

Description	Quantity	Location
Hollow bulb gasket (see attached drawing #USA-2964)	1 row	Inserted into channel of frame full perimeter.
Foam filled bulb gasket (see attached drawing #USA-1820)	1 row	Inserted in channel of leaf full perimeter.

5.5 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Aluminum A1-D1	1/4" clear tempered	1/4" clear tempered	Exterior tape glazed with 3/8" x 1/8" tape and a cap bead at interior side and secured at exterior with glazing bead (See attached Drawing #60939) and rubber wedge gasket (see attached Drawing #USA-1819B).

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Leaf	1	985 x 2200	38-25/32 x 86-5/8	1/2"

5.0 Test Specimen Description: (Continued)

5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weep hole	1-3/4" x 1/4"	1	Mid-span of threshold at exterior face with weep hole cover inserted into opening (see attached Drawings #5520HS-031 and 5520HS-032)
Weep hole	3/4" x 1/8"	2	1" from each end of glazing pocket of bottom rail of leaf.

5.7 Hardware:

Description	Quantity	Location
Hoppe Athinai M156/216N handle assembly	1	Located 36" from sill and secured to lock stile with three #10 x 2-1/2" Phillips oval head screws.
Handle/deadbolt strike	1	Located directly opposite handle assembly on lock jamb and secured with three #10 x 1/2" Phillips flat head screws (see attached Drawing #900-40).
Hoppe active tongue system	1	One tongue located 12" from sill and the other tongue located 30" from head on leaf lock stile, system was secured to stile with #8 x 1" Phillips flat head screws 6" on center spacing of full length of stile.
Tongue strike	2	Located directly opposite tongue on lock jamb and secured with two #10 x 1/2" Phillips flat head screws (see attached drawing #900-42B).
Shoot bolt strike	2	Located directly opposite shoot bolt in corner of head and sill at lock jamb and secured to head and sill with two #10 x 1/2" Phillips flat head screws (see attached drawing #900-43C).
Butt hinge	4	Located 8-3/4" from sill and 26-1/4" on center, secured to frame jamb with four #12-24 x 7/8" Phillips flat head screws and to leaf stile with four #12 x 1" Phillips pan head screws (see attached drawing #900-24B).

5.0 Test Specimen Description: (Continued)

5.8 Reinforcement:

Drawing Number	Location	Material
C-1253	Inserted into corner joints of leaf assembly.	Aluminum

5.9 Screen Construction: No screen was utilized.

6.0 Installation:

The specimen was installed into a Pine wood buck. The rough opening allowed for a 3/8" shim space. The exterior and interior perimeters of the door frame were sealed with structural silicone sealant.

Location	Anchor Description	Anchor Location
Full perimeter	#12 x 2" Phillips flat head screw	6" from corners and 12" on center.

7.0 Test Results: The temperature during testing was 27°C (81°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, Force to latch test procedure, per AAMA 101	Force to latch: 26.7 N (6.0 lbf) Deadbolt: 4.5 N/m (1.0 lbs/in) Force for deadbolt: 0 N (0.0 lbf) Force for secondary: 80.1 N (18.0 lbf)	Report Only Report Only Report Only Report Only	
Air Leakage, Infiltration per ASTM E 283 at 300 Pa (6.27 psf)	0.2 L/s/m^2 (0.03 cfm/ft^2)	0.5 L/s/m^2 (0.10 cfm/ft^2) max.	1
Water Penetration, per ASTM E 547 and ASTM E 331 at 580 Pa (12.11 psf)	Pass	No leakage	
Life Cycle per AAMA 910			
Door Leaf Cycling, (First half) per AAMA 910 12,500 cycles	Pass	No damage	
Locking Hardware Cycling, (First half) per AAMA 910 2000 cycles	Pass	No damage	
Misuse Testing per AAMA 910			
Door Leaf Vertical Load at 890 N (200 lbf)	Pass	No damage	
Door Leaf Corner Block at 334 N (75 lbf)	Pass	No damage	
Life Cycle per AAMA 910			
Door Leaf Cycling, (Second half) per AAMA 910 12,500 cycles	Pass	No damage	
Locking Hardware Cycling, (Second half) per AAMA 910 2000 cycles	Pass	No damage	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Operating Force, Force to latch test procedure, per AAMA 101	Force to latch: 40.0 N (9.0 lbf) Deadbolt: 4.5 N/m (1.0 lbs/in) Force for deadbolt: 0 N (0.0 lbf) Force for secondary: 111.2 N (25.0 lbf)	 Report Only Report Only Report Only Report Only	
Uniform Load Deflection, per ASTM E 330 taken at top rail +3840 Pa (+80.20 psf) -3840 Pa (-80.20 psf)	 1.3 mm (0.05") 3.1 mm (0.12")	 6.1 mm (0.24") max. 6.1 mm (0.24") max.	 2, 3
Air Leakage, Infiltration per ASTM E 283 at 300 Pa (6.27 psf)	0.2 L/s/m^2 (0.04 cfm/ft^2)	0.5 L/s/m^2 (0.10 cfm/ft^2) max.	1
Water Penetration, per ASTM E 547 and ASTM E 331 at 580 Pa (12.11 psf)	Pass	No leakage	
Uniform Load Structural, per ASTM E 330 taken at top rail +5760 Pa (+120.3 psf) -5760 Pa (-120.3 psf)	 0.0 mm (0.00") 0.0 mm (0.00")	 2.3 mm (0.09") max. 2.3 mm (0.09") max.	 2, 3
Forced Entry Resistance, per AAMA 1304	Pass	No entry	

Note 1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

Note 2: Loads were held for 10 seconds.

Note 3: Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

General Note: *The door was tested in accordance with the venting use classification.*

The service life of this report will expire on the stated Test Record Retention End Date, at which time such materials as drawings, data sheets, samples of test specimens, copies of this report, and any other pertinent project documentation, shall be discarded without notice.

If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen can be made. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, Inc.

Digitally Signed by: Jarod Hardman

Jarod S. Hardman
Laboratory Manager

Digitally Signed by:Kenny C. White

Kenny C. White
Laboratory Manager

JSH:ss

Attachments (pages): This report is complete only when all attachments listed are included.
- Appendix-A: Alteration Addendum (1)
- Appendix-B: Photographs (2)
- Appendix-C: Drawings (26)

Appendix A

Alteration Addendum

***Note**: No alterations were required.*

Appendix B

Photographs

Photo No. 1
Door Cycling Set-up – Interior

Photo No. 2
Door Cycling Set-up – Exterior

Photo No. 3
Door Cycling – Completion of First Half

Photo No. 4
Door Cycling – Completion of Second Half

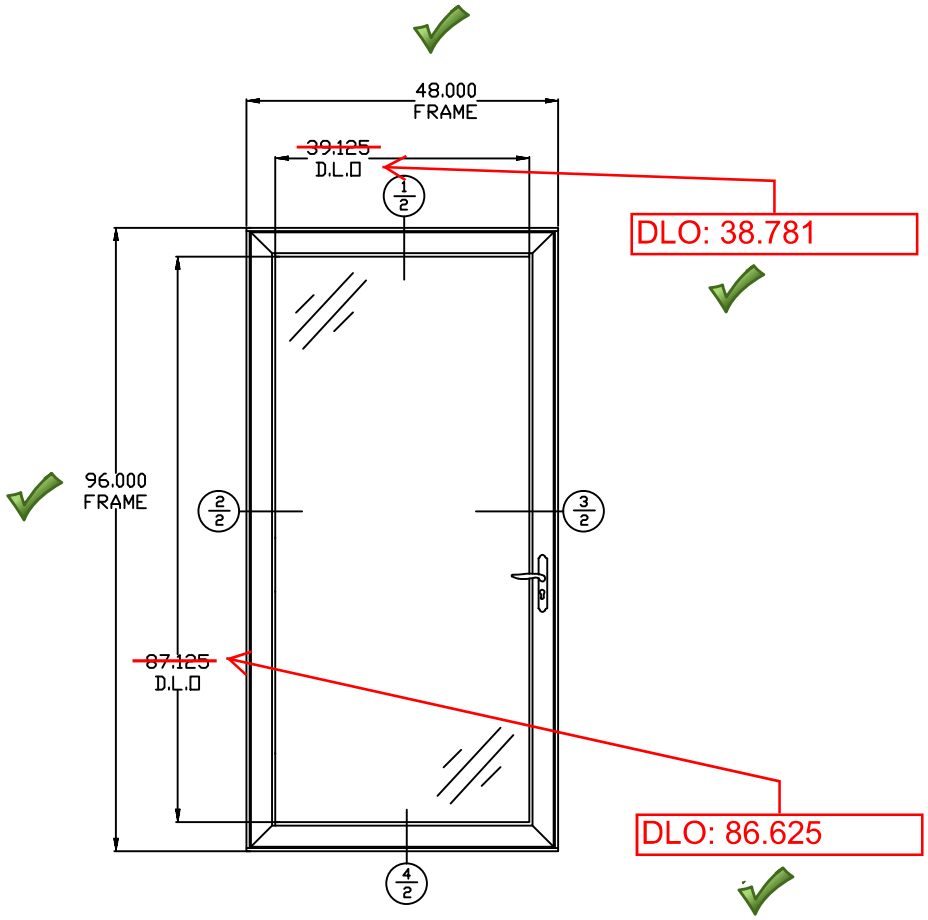
Appendix C

Drawings

MU2014TRD900S□S06204

OUT-SWING SINGLE TERRACE DOOR
BILL OF MATERIAL

LINE.	P/N	DIE	DESCRIPTION		
1.	HT450 HEAD ASM.				
		HE450	HEADER INTERIOR		
2.		HI450	HEADER EXTERIOR		
	JT450 JAMB ASM				
		JE450	JAMB INTERIOR		
		JI450	JAMB EXTERIOR		
3.	HT300 SASH ASM				
		HE300	SASH INTERIOR		
		HI300	SASH EXTERIOR		
4.	HT451 SILL ASM				
		HE450	HEADER INTERIOR		
		HI451	OUTSWING THRESHOLD		
5.		TB186	INSULBAR		
6.		WN429	GLASS STOP		
HARDWARE, VINYL, GASKET, AND SILICONE					
7.	GT416	⅜ x 5/32 x⅛ x40 TAPE			
8.	WH342	BULB GASKET			
9.	WH344	WEDGE GASKET			
10.	NP257	BULB SEAL			
11.	WB410	EDGE BLOCK		6 EA	
12.	SB222	SETTING BLOCK		4 EA	
13.	EC96499	END CAPS		4 EA	
14.	NP810	FINGER GASKET			
15.	995BL	STRUCTURAL SILICONE			
16.	2661072	ACTIVE TONGUE VERSION		1 EA	HOPPE
17.	2132736	ATHINAI M156/ 216N SERIES (SATIN NICKEL)		1 EA	HOPPE
18.	WH751	BUTT HINGE (900-24)		6 EA	
19.	MS17442	NO. 12-24 X ⅞", QTY: 12 EA		24 EA	
20.	ST27542	NO. 12 X 1" SMS QTY: 12 EA		24 EA	
22.	TH701	DEADBOLT STRIKE		1 EA	HOPPE
23.	TH702	TONGUE STRIKE		2 EA	HOPPE
24.	TH704	SHOOT BOLT STRIKE		2 EA	HOPPE
25.	WH27633	WEEPING HOLE COVER		1 EA	
26.	ST24000	NO. 12 X ½" PHL FH SMS		14 EA	
27.	ST25000	NO. 10 X 1-1/4" PHL FH SMS ZP		4 EA	
28.	CB30099	CORNER ANGLE		8 EA	
29.	ST12311	NO. 12 X 3/8" PHL FH SMS SS		4 EA	
30.	ST19842	NO. 8 X 1" PHL FH SMS SS		32 EA	
31.	ST27642	NO. 12 X 1" HEX HEAD SCREW		12 EA	



Architectural Testing

Report #: D6385-301-44

Date: 10/01/2014

Verified by:

SYMBOL KEY		
SYMBOL	DESCRIPTION	QTY.
Ⓐ	1" INSULATED GLASS 1. ¼" CLEAR TEMPERED GLASS 2. ½" ALUMINUM SPACER 3. ¼" CLEAR TEMPERED 4. GLASS SIZE: 40.125" X 88.125"	1 EA

REV.	DESCRIPTION	DATE	BY

C.R. LAURENCE CO., INC.
CRL MANUFACTURING
2100 E. 38TH STREET
LOS ANGELES, CA 90058

DRAWN BY: MR

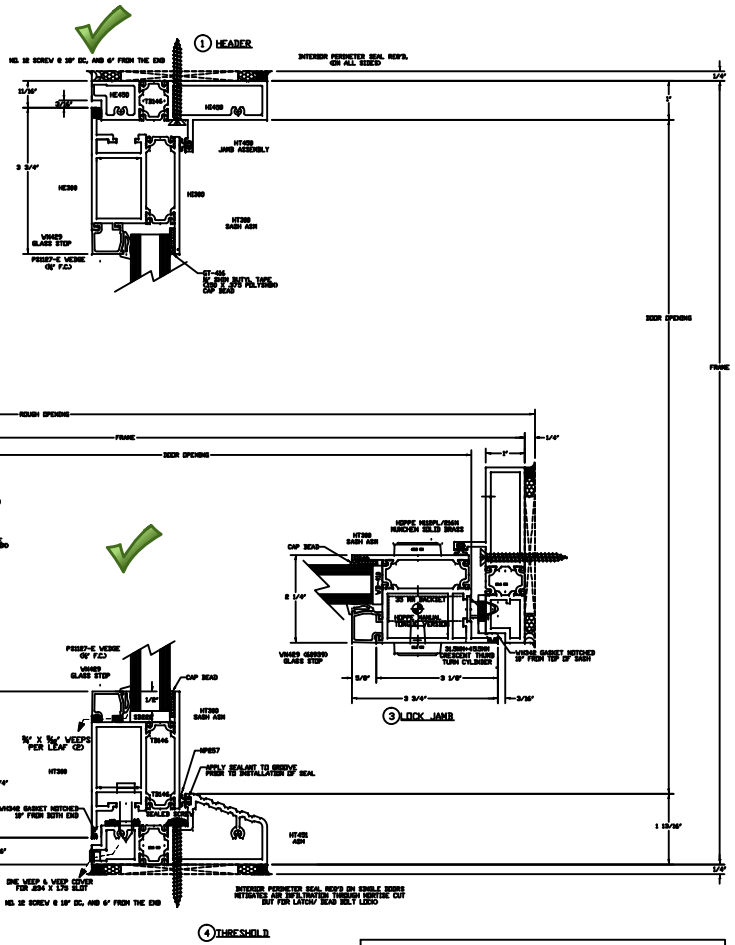
DATE: 03.04.14

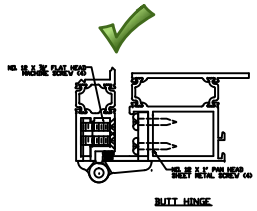
SCALE: ¾"=1'-0"

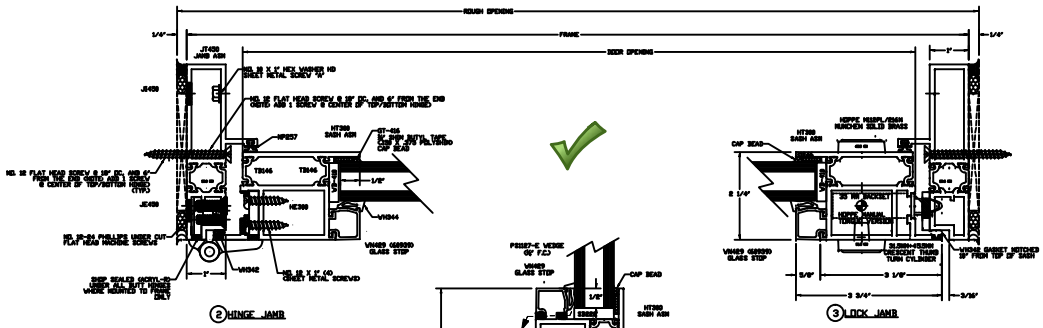
TITLE: 900 OUT-SWING SINGLE TERRACE DOOR MACK-UP DRAWING

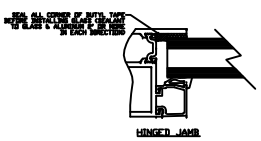
DRAWING NO. MU2014TRD900S□S06204

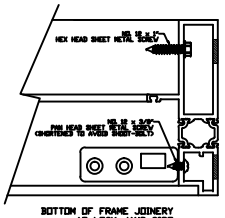
MU2014TRD900S□S06204

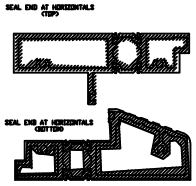




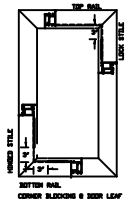


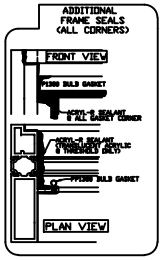






EACH GLASS SIZE = DLO + 1"
(WEIGHT=107-lbs)





900 SINGLE OUTSWING TERRES DOORS

ACTIVE TONGUE / SHOOTBOLT VERSION
HLS-7 SERIES MULTIPOINT LOCK SYSTEM

Architectural Testing
Report #: D6385-301-44
Date: 10/01/2014
Verified by:

REV.	DESCRIPTION	DATE	BY

C.R. LAURENCE CO., INC.
CRL MANUFACTURING
2100 E. 38TH STREET
LOS ANGELES, CA 90058

DRAWN BY: MR
DATE: 03.04.14
SCALE: $\frac{3}{4}$"=1'-0"

TITLE: 900 OUT-SWING SINGLE TERRACE DOOR MACK-UP DRAWING

DRAWING NO. MU2014TRD900S□S06204