

## TEST REPORT

**Report No.:** E3210.01-301-47

**Rendered to:**

CR LAURENCE CO., INC.  
Vernon, California

**PRODUCT TYPE:** Sliding Glass Door  
**SERIES/MODEL:** 3000

**SPECIFICATION(S):** AAMA/WDMA/CSA 101/I.S.2/A440-11, *NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights.*

Title	Summary of Results
AAMA/WDMA/CSA 101/I.S.2/A440-11	Class CW – PG40: Size Tested 2438 x 2438 mm (96 x 96 in.) – Type SD
Design Pressure	±1920 Pa (±40.10 psf)
Air Infiltration	1.0 L/s/m <sup>2</sup> (0.20 cfm/ft <sup>2</sup> )
Water Penetration Resistance Test Pressure	290 Pa (6.06 psf)

**Test Completion Date:** 11/25/14

Reference must be made to Report No. E3210.01-301-47, dated 01/05/15 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:** Sliding Glass Door

**3.2 Series/Model:** 3000

**3.3 Compliance Statement:** Results obtained are tested values and were secured by using the designated test method. The specimen tested successfully met the performance requirements for a **Class CW – PG40: Size Tested 2438 x 2438 mm (96 x 96 in.) – Type SD** rating.

**3.4 Test Date:** 11/25/14

**3.5 Test Record Retention End Date:** All test records for this report will be retained until November 25, 2018.

**3.6 Test Location:** CR Laurence Co., Inc. test facility in Vernon, 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".

**3.7 Test Specimen 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.

**3.8 Drawing Reference:** The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen 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.

**3.9 List of Official Observers:**

<u>Name</u>	<u>Company</u>
Marco Ramirez	CR Laurence Co., Inc.
Jarod S. Hardman	Architectural Testing, Inc.

#### 4.0 Test Specification:

AAMA/WDMA/CSA 101/IS.2/A440-11, *NAFS 2011 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*.

#### 5.0 Test Specimen Description:

##### 5.1 Product Sizes:

Overall Area: 5.95 m <sup>2</sup> (64.0 ft <sup>2</sup> )	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	2438	96	2438	96
Active panel	1253	49-11/32	2374	93-15/32
Screen	1280	50-3/8	2372	93-3/8

##### 5.2 Frame Construction:

Frame Member	Material	Description
Head	Aluminum	Thermally broken extrusion consisting of head interior (see attached Part No. D1017) and head exterior (see attached Part No. DE017).
Head	Nylon	Screen door bumper and cap (see attached Part No. HS3SCEC1), inserted into ends of screen track and secured through top of track with two #8 x 1/2" Phillips flat head screws.
Sill	Aluminum	Thermally broken extrusion consisting of sill interior (see attached Part No. D1027) and sill exterior (see attached Part No. DE018)
Sill	Stainless steel	Roller track (see attached Drawing No. EL103), snap fit into sill interior (Part No. D1027), full length of sill.
Sill	PVC	Sill riser (see attached Drawing No. 3000-154) press fit into sill exterior (Part No. DE018) full length of sill.
Sill	Aluminum	Threshold cap (see attached Part #DU007), snap fit into sill exterior (Part No. DE018) from jamb to interlock on top of sill riser.
Jambs	Aluminum	Thermally broken extrusion consisting of jamb interior (see attached Part No. D1016) and jamb exterior (see attached Part No. DE1016).

## 5.0 Test Specimen Description: (Continued)

### 5.2 Frame Construction: (Continued)

	Joinery Type	Detail
All corners	Coped	Secured through jambs into head with two #8 x 1" Phillips truss head screws into screw bosses. Secured through jambs into sill with one #8 x 1" Phillips truss head screw at exterior side into screw bosses and one #8 x 2" Phillips truss head screw at interior side into screw bosses.

### 5.3 Panel Construction:

Panel Member	Material	Description
Fixed panel top rail	Aluminum	Thermally broken extrusion consisting of top rail interior (see attached Part No. D1002) and top rail exterior (see attached Part No. DE002).
Fixed panel bottom rail	Aluminum	Thermally broken extrusion consisting of bottom rail interior (see attached Part No. DE051) and bottom rail exterior (see attached Part No D1051).
Fixed panel jamb stile	Aluminum	Thermally broken extrusion consisting of stile interior (see attached Part No. D1022) and stile exterior (see attached Part No. DE022).
Fixed panel interlock	Aluminum	Thermally broken extrusion consisting of interlock interior (see attached Part No. D1021) and interlock exterior (see attached Part No. DE021).
Active panel top rail	Aluminum	Thermally broken extrusion consisting of head interior (see attached Part No. DE002) and head exterior (see attached Part No. D1002).
Active panel bottom rail	Aluminum	Thermally broken extrusion consisting of bottom rail interior (see attached Part No. D1051) and bottom rail exterior (see attached Part No DE051).
Active panel lock stile	Aluminum	Thermally broken extrusion consisting of stile interior (see attached Part No. D1009) and stile exterior (see attached Part No. DE009).

## 5.0 Test Specimen Description: (Continued)

### 5.3 Panel Construction: (Continued)

Panel Member	Material	Description
Active panel interlock	Aluminum	Thermally broken extrusion (see attached Drawing No. 3001-109), interlock cap (Part No. EC327BLN) fitted to top of extrusion at head of interior and secured with two #10 x 1-1/2" Phillips flat head screws.
Active panel interlock	PVC	Vent isolator (see attached Drawing No. 3000-160) press fit into active panel interlock extrusion (Part No. 300-109).
Fixed panel interlock	PVC	Vent isolator (see attached Drawing No. 3000-159), snap fit over fixed panel interlock.

	Joinery Type	Detail
All corners	Flush	Secured through jamb stiles at top rail with one #8 x 2" Phillips truss head screw, through the fixed jamb stiles at bottom rail with one #8 x 3" Phillips truss head screw, and through active jamb stiles at bottom rail with two #12 x 4" Phillips truss head screws.

### 5.4 Weatherstripping:

Description	Quantity	Location
2 finger vinyl weather strip	1 row	Inserted into thermal break at exterior side, full length of head, sill, and jambs (see attached Drawing No. DP-SP-011).
0.270 x 0.250 triple fin weather strip	1 row	Inserted into thermal break at interior side, full length of head, sill, and jambs.
0.270 x 0.250 triple fin weather strip	1 row	Inserted into interior leg of fixed jamb and fixed panel vent isolator full length of span.
0.190 x 0.310 plain pile weather strip	2 rows	Inserted into active panel vent isolator full length of span.
PVC sweep gasket	1 row	Inserted into fixed panel vent isolator full length of span (see attached Drawing No. 3000-158).

## 5.0 Test Specimen Description: (Continued)

**5.5 Glazing:** *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Aluminum Spacer – Dual Seal (A1-D)	1/4" tempered	1/4" tempered	Channel glazed with 1" glazing gasket Drawing No. 3000-162.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Active panel	1	1098 x 2236	43-1/4 x 88	5/8"
Fixed panel	1	1095 x 2236	43-1/8 x 88	5/8"

## 5.6 Drainage:

Drainage Method	Size	Quantity	Location
Weep hole	1-3/4" x 1/4"	6	One located 3-1/4" from each corner and four located mid-span of sill 2" on center spacing from mid-point. Weep cover, Drawing No. USA-2960 fitted with Drawing No. USA-2961, inserted into each weep hole.
Breathing port	1" x 1/2"	2	Relief cut into center leg thermal break of sill at each jamb, allowing air flow to travel up the jamb thermal break center leg.

## 5.7 Hardware:

Description	Quantity	Location
Handle hardware set	1	Part #BOH1011, centered 42" from sill and secured through lock stile with two #10-32 x 2.25" Phillips oval head screws.
Mortise lock	1	Part #BOH1016, centered 42" from sill and secured inside of jamb stile with two #10 x 1/2" Phillips flat head screws.

## 5.0 Test Specimen Description: (Continued)

### 5.7 Hardware: (Continued)

Description	Quantity	Location
Deep backset strike	1	Drawing # 0132, secured to active panel jamb with four #12 x 4" Phillips flat head screws through predrilled holes, centered directly opposite lock hardware.
Screen strike	1	Fastened to lock jamb 42" from sill and secured with two 8-32 x 1/2" Phillips hex head screws.
PVC guide	1 row	Inserted into the interior leg of the head, sill, and jambs (see attached Drawing No. USA-3180).
Vent stop	1	Secured at fixed jamb in sill with #14 x 1-1/2" Phillips flat head screws (see attached Drawing No. 3025-060).
Vent stop bumper	1	Rubber bumper press fit into end of vent stop directly opposite active panel interlock.
Fixed panel clip	2	Inserted into ends of fixed panel interlock and secured with one #12 x 3/4" Phillips hex head screw into the interlock and two #12 x 3/4" hex head screws into both the head and sill to retain the fixed panel (see attached Drawing No. 3025-062).
3-1/2" radius end plug	1	Inserted into both interlocks at sill to cover fastener access hole (see attached Drawing No. 3000-150).
2-1/4" radius end plug	1	Inserted into fixed panel interlock at sill to cover fastener access hole (see attached Drawing No. 3000-153).
Round end plug	2	Inserted into active panel interlock at head to cover fastener access hole (see attached Drawing No. 3000-152).
Dual wheel roller assembly	2	Inserted into bottom rail of active panel and secured at jambs with fasteners used to join jamb to rail (see attached Part No. 1997-PRS-3115SS).

## 5.0 Test Specimen Description: (Continued)

**5.8 Reinforcement:** No reinforcement was utilized.

### 5.9 Screen Construction:

Frame Material	Corner Construction	Mesh Type	Mesh Attachment Method
Aluminum	Mitered corner with corner key secured with four #6 x 9/16" Torx truss head screws, two per side	Heavy-Duty Fiberglass	3/16" solid foam spline

## 6.0 Installation:

The specimen was installed into a Pine wood buck. The rough opening allowed for a 1/4" shim space. The exterior and interior perimeter of the door was sealed with structural silicone sealant.

Location	Anchor Description	Anchor Location
Through frame full perimeter	#10 x 2" Phillips flat head screws	Two fasteners at each point, 3" from corners and 15" on center spacing.



**7.0 Test Results:** The temperature during testing was 22°C (71°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
<b>Operating Force,</b> per ASTM E 2068	Initiate motion: 173.5 N (39.0 lbf) Maintain motion: 62.3 N (14.0 lbf) Locks: 8.9 N (2.0 lbf)	180 N (40.5 lbf) max. 115 N (25.9 lbf) max. 100 N (22.5 lbf) max.	
<b>Air Leakage,</b> Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	1.0 L/s/m <sup>2</sup> (0.20 cfm/ft <sup>2</sup> )	1.5 L/s/m <sup>2</sup> (0.3 cfm/ft <sup>2</sup> ) max.	1
<b>Water Penetration,</b> per ASTM E 547 at 140 Pa (2.92 psf)	N/A	N/A	3
<b>Uniform Load Deflection,</b> per ASTM E 330 Deflections taken at interlock +720 Pa (+15.04 psf) -720 Pa (-15.04 psf)	N/A	N/A	3
<b>Uniform Load Structural,</b> per ASTM E 330 Permanent sets taken at interlock +1080 Pa (+22.56 psf) -1080 Pa (-22.56 psf)	N/A	N/A	3
<b>Forced Entry Resistance,</b> per ASTM F 842, Type: A - Grade: 10	Pass	No entry	
<b>Forced Entry Resistance,</b> per ASTM F 842, Type: D	Pass	No entry	
<b>Deglazing,</b> per ASTM E 987 Operating direction, 320 N (70 lbf) Remaining direction, 230 N (50 lbf)	Pass  Pass	Meets as stated  Meets as stated	

## 7.0 Test Results: (Continued)

Optional Performance			
Title of Test	Results	Allowed	Note
<b>Water Penetration,</b> per ASTM E 547 at 290 Pa (6.06 psf)	Pass	No leakage	2
<b>Uniform Load Deflection,</b> per ASTM E 330 Deflections taken at interlock +1920 Pa (+40.10 psf) -1920 Pa (-40.10 psf)	10.9 mm (0.43") 9.9 mm (0.39")	13.2 mm (0.52") max. 13.2 mm (0.52") max.	4, 5
<b>Uniform Load Structural,</b> per ASTM E 330 Permanent sets taken at interlock +2880 Pa (+60.15 psf) -2880 Pa (-60.15 psf)	0.5 mm (0.02") 0.3 mm (0.01")	6.9 mm (0.27") max. 6.9 mm (0.27") max.	4, 5

*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: With and without insect screen.*

*Note 3: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.*


*Note 4: Loads were held for 10 seconds.*

*Note 5: 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.*

Architectural Testing will service this report for the entire test record retention period. Test records such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Architectural Testing, Inc. for the entire test record retention period.

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 for: Leaton Kirk by Marisela Saavedra

Leaton Kirk  
Director – Regional Operations

JSH:ss

Attachments (pages): This report is complete only when all attachments listed are included.

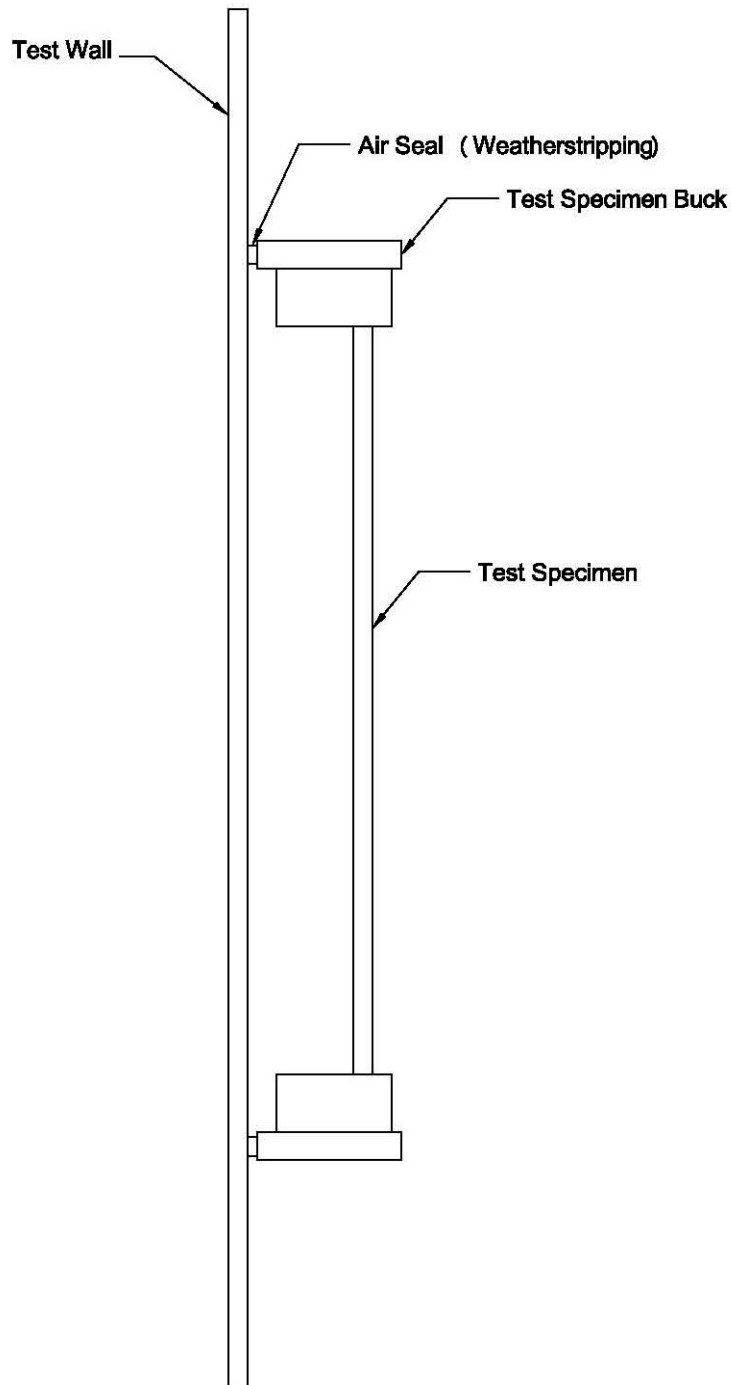
- Appendix-A: Alteration Addendum (1)
- Appendix-B: Location of Air Seal (1)
- Appendix-C: Drawings (83)

**Appendix A**  
**Alteration Addendum**

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

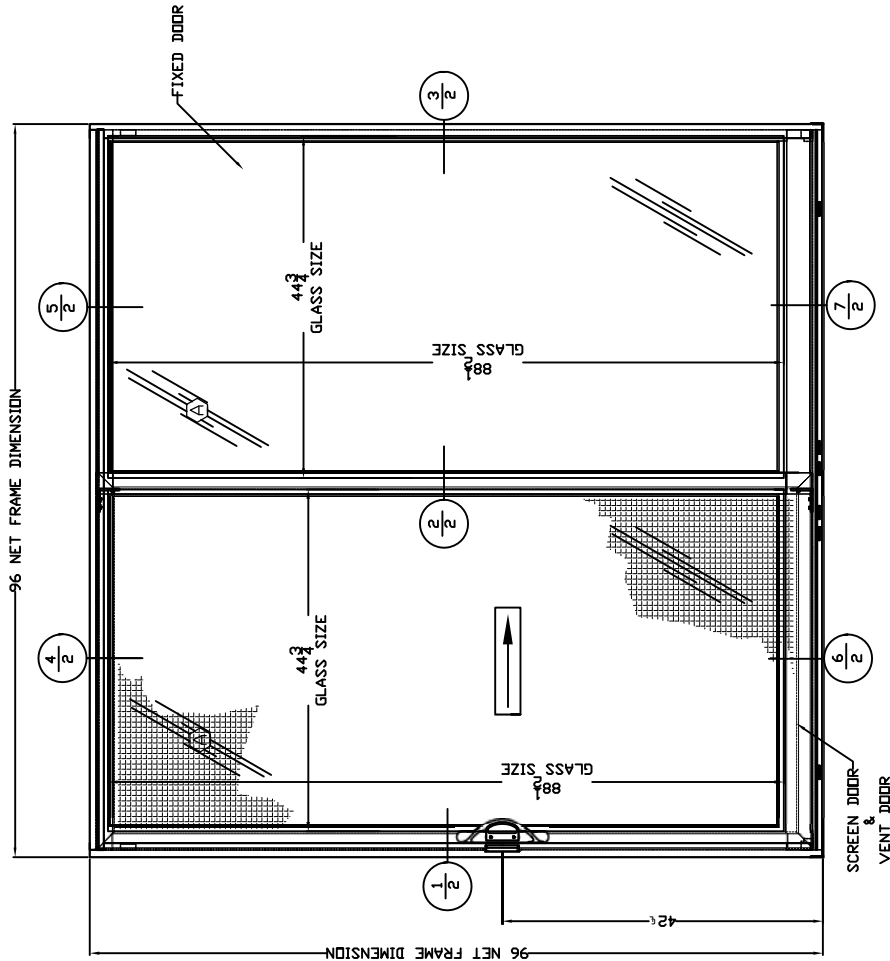
### Appendix B

**Location of Air Seal:** The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.



## **Appendix C**

### **Drawings**




3000 SERIES SLIDING DOOR ELEVATION - XD(R) CONFIGURATION (AS SHOWN)

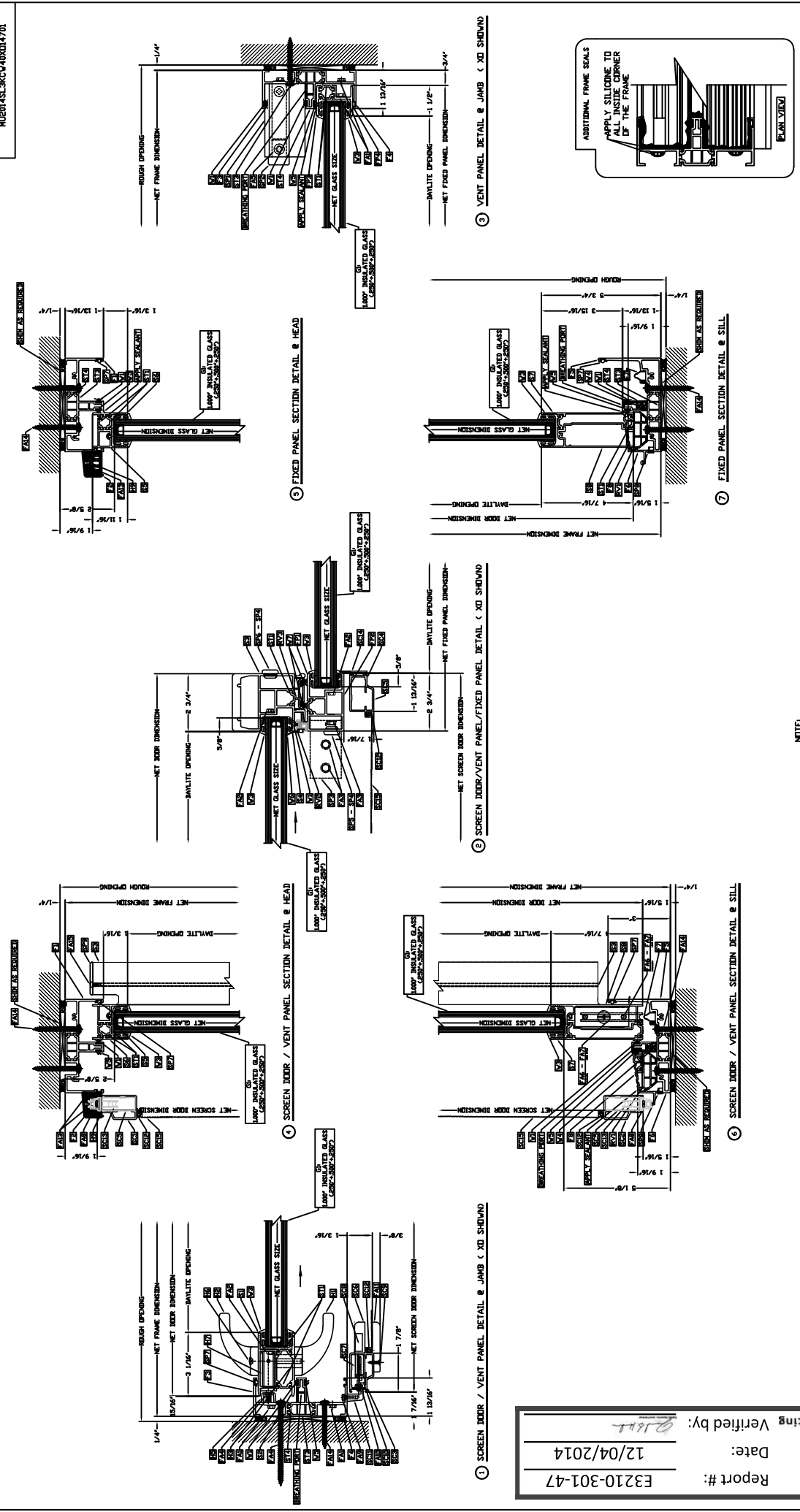
CW40



Report #: E3210-301-47  
Date: 12/04/2014  
Verified by: *[Signature]*

NOTE:  
1. PRODUCT TESTING & CERTIFICATION NUMBER: PTC385674  
(PRODUCT BEING TESTED: HS314BNUS)

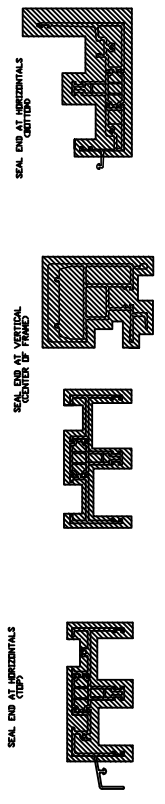
THIS DRAWING AND THE DESIGN SHOWN THEREIN IS THE PROPERTY OF C.R. LAURENCE CO., INC. AND USE OR COPIES THEREOF CANNOT BE MADE WITHOUT WRITTEN CONSENT.				C.R. LAURENCE CO., INC. CRL MANUFACTURING 2100 E. 38TH STREET LOS ANGELES, CA 90058			
							
				DRAWING NO. MU2014SL3KCV40XD14701			
				SHEET NO. 1 OF 5			
				TITLE: 3000 SERIES SLIDER DOOR CONFIG. XD -CW40- MOCK-UP DRAWING			
				DRAWN BY: MR DATE: 03.04.14 SCALE: 3/4"=1'-0"			
				REV. DESCRIPTION DATE BY			



Report #: E3210-301-47

Date: 12/04/2014

Verified by: [Signature]



REV.	DESCRIPTION	DATE	BY	DATE	BY

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DRAWN BY: MR	DATE: 03.04.14
SCALE: 3/8"=1'-0"	

BRANDING NO.	MUB04SL3KCV40XD4701
SHEET NO. 2 OF 5	

C.R. LAURENCE CO., INC.  
3000 SERIES SLIDER DOOR  
2100 E. 38TH STREET  
LOS ANGELES, CA 90058





Architectural Testing

Report #: E3210-301-47


Date: 12/04/2014

Verified by: *[Signature]*

BILL OF MATERIALS FOR 3040 SERIES SLIDING PATIO DOOR

ITEM #		PART NO	DESCRIPTION	COMMENTS	QTY.	FINISHES	
F1	FRAME	DT017	4-1/2" BLOCK HEAD - INTERIOR	COLOR TO MATCH P.D.	1	CLASS 1	BRONZE
F2		DT017	4-1/2" BLOCK HEAD - EXTERIOR	COLOR TO MATCH P.D.	1		
F3		DT016	4-1/2" BLOCK JAMB - INTERIOR	COLOR TO MATCH P.D.	2		
F4		DT016	4-1/2" BLOCK JAMB - EXTERIOR	COLOR TO MATCH P.D.	2		
F5		DT027	CV40 & CV60 SILL - INTERIOR	COLOR TO MATCH P.D.	1		
F6		DE018	LC25 SILL - EXTERIOR	COLOR TO MATCH P.D.	1		
F7		EL103	SS TRACK COVER	MILL FINISH	1		
F8		DU007	THRESHOLD CAP	COLOR TO MATCH P.D.	1		
S1	VENT PANEL		LEAD STILE - INTERIOR	COLOR MATCH TO P.D.	1		
S2		DT009	LEAD STILE - EXTERIOR	COLOR MATCH TO P.D.	1		
S3		DT019	CV40 VENT INTERLOCK - INTERIOR	COLOR MATCH TO P.D.	1		
S4				COLOR MATCH TO P.D.	1		
S5		DT002	VENT TOP RAIL - INTERIOR	COLOR MATCH TO P.D.	1		
S6			VENT TOP RAIL - EXTERIOR	COLOR MATCH TO P.D.	1		
S7		DT051	VENT BOTTOM RAIL - INTERIOR & EXT PANEL	COLOR MATCH TO P.D.	1		
S8			VENT BOTTOM RAIL - EXTERIOR & INT PANEL	COLOR MATCH TO P.D.	1		
FP1	FIXED PANEL		FIXED INTERLOCK - INTERIOR	COLOR MATCH TO P.D.	1		
FP2		DT021	FIXED INTERLOCK - EXTERIOR	COLOR MATCH TO P.D.	1		
FP3			FIXED STILE - INTERIOR	COLOR MATCH TO P.D.	1		
FP4		DT022	FIXED STILE - EXTERIOR	COLOR MATCH TO P.D.	1		
FP5		DT002	FIXED TOP RAIL - INTERIOR	COLOR MATCH TO P.D.	1		
FP6			FIXED TOP RAIL - EXTERIOR	COLOR MATCH TO P.D.	1		
S7		DT051	FIXED BOTTOM RAIL - INTERIOR	COLOR MATCH TO P.D.	1		
S8			FIXED BOTTOM RAIL - EXTERIOR	COLOR MATCH TO P.D.	1		
ST1	STRUTS	STR192	18.6 MM OFFSET STRUT				
ST2		STR341	34MM MM OFFSET STRUT				
ST3		STR342	34 MM FRAME ISOLATOR				
ST4		STR181	18.6 MM 90° STRUT				

CW40



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DESCRIPTION

DRAWN BY: MR

DATE: 03.04.14

TITLE: 3000 SERIES SLIDER DOOR  
CONFIG. XCI -CW40-  
PACK-UP DRAWING

DRAWING NO. MU2014SL3KCW40XD14701

SHEET NO. 3 OF 5

NOTE:  
1. PRODUCT TESTING & CERTIFICATION NUMBER: PTC385674  
(PRODUCT BEING TESTED: HS314BN11S)



