

# Fenestration Testing Laboratory, Inc.

10235 8<sup>th</sup> Street, Rancho Cucamonga, CA 91730

Report #: T21-003

## REPORT SUMMARY

### REPORT #

Report #T21-003

### TESTED FOR

C.R. Laurence Co., Inc.

2100 E 38th St.

Vernon, CA 90058

### SERIES & PRODUCT TYPE

S100 - THERMALLY BROKEN ALUMINUM SLIDING GLASS DOOR - INSIDE SLIDE

### CONFIGURATION

OX

### FRAME SIZE

2908.30 mm x 3041.65 mm (114.50" x 119.75")

### SPECIFICATION

NAFS - North American Fenestration Standard/specification for windows, doors, and skylights

AAMA/WDMA/CSA 101/I.S.2/A440-17

### PRIMARY DESIGNATOR

CLASS CW-PG40 2908.30 x 3041.65 mm (114.50 x 119.75 in) Type: SD

### TEST COMPLETION DATE

January 12, 2021

### REPORT DATE

January 28, 2021

# Fenestration Testing Laboratory, Inc.

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Report #: T21-003

**1.0 Tested For:** C.R. Laurence  
2100 E 38th St.  
Vernon, CA 90058

**2.0 Purpose:**

The purpose of this report is to present the testing methods employed and the test results obtained during the performance testing of one (1) THERMALLY BROKEN ALUMINUM SLIDING GLASS DOOR described in paragraph 5.0 of this report.

**3.0 Test References:**

- 3.1** NAFS - North American Fenestration Standard/specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-17
- 3.2** ASTM F 842-17 Forced Entry Resistance Tests for Sliding Door Assemblies
- 3.3** CAWM 300-96 Forced Entry Test Resistance Tests for Sliding Glass Doors

**4.0 Compliance Statement:** The test results in paragraph 6.0 indicate that the test sample described in paragraph 5.0 of this report met the performance requirements of the above specifications for the performance grade shown in 4.1 below.

**4.1** CLASS CW-PG40 2908.30 x 3041.65 mm (114.50 x 119.75 in) Type: SD

**5.0 Sample Submitted:**

**5.1 Product Type:** THERMALLY BROKEN ALUMINUM SLIDING GLASS DOOR

**5.2 Series:** S100

**5.3 Configuration:** OX

<b>5.4 Product Dimensions:</b>	<b>Millimeters</b>	<b>Inches</b>
Total Frame:	2908.30 x 3041.65	114.50 x 119.75
Fixed Panel:	1425.70 x 2937.00	56.13 x 115.63
Active Panel:	1425.70 x 2937.00	56.13 x 115.63

**5.5 Glass and Glazing:**

<i>IGU Thickness</i>	<i>Spacer Size</i>	<i>Interior Lite</i>	<i>Exterior Lite</i>	<i>Glazing method</i>
1" overall wide	0.5"	1/4" Tempered	1/4" Tempered	Channel glazed with wrap around gasket.

**5.6 Weepage:**

<i>Drainage Method</i>	<i>Size</i>	<i>Quantity</i>	<i>Location</i>
Rectangular weep	1.75" x 0.25"	4	Sill outside face, 2" from each end and 52" from each end.
Vertical rectangular weep	1.75" x 0.25"	8	Sill fixed channel, one pair in line with each sill outside face weep.
Rectangular weep	1.5" x 0.25"	6	Sill contained a hollow center vertical leg with weeps at 4.5" from each jamb and approximately 5" from the interlock each way, and one in line with the mid-span of each panel on the fixed channel side. The same size and number of weeps were also on the active channel side of the center leg offset from the weeps on the fixed channel side.
Vertical round weep	0.25" diameter	2	Bottom rail on both the fixed and active panels.

**5.7 Pressure balancing:**

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<i>Hole Size</i>	<i>Quantity</i>	<i>Location</i>
0.25"	2	Sill - on top of center leg (center leg was a hollow) at 13.5" and 40.5" from fixed jamb inboard of fixed. Each hole contained reticulated foam baffle.

## 5.8 Weather-stripping:

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
0.270" overall high polypile tri-fin	1	Full perimeter on active channel facing in, except for fixed jamb section.
Rigid plastic shim/glide	1	Full perimeter on active channel facing out, except for fixed jamb section.
2 finger vinyl	4	On frame fixed channel; one (1) full perimeter facing in, and one (1) full perimeter facing out. On frame active channel; one (1) on fixed jamb facing in and one on fixed jamb facing out.
Single-sided adhesive foam tape	2	0.75" x 0.125" strip on active interlock facing out, fixed interlock facing in.

## 5.9 Sealants:

Sealant was applied at the following locations:

- All frame corners, sealed full perimeter
- End dams were applied to each end of the head and sill and sealed full profile.
- Active and fixed panel corners were sealed
- Fixed panel interlock was sealed to the sill center leg with a foam gasket and to the fixed channel with silicone.
- Fixed panel interlock was sealed to the head fix channel. At head fixed channel, sealant extended from the interlock and fixed top rail 6" on each side of fixed panel to head interface.
- Fixed interlock plug is sealed to the interlock.
- Heads of frame anchor screws were sealed.
- All sill fastener heads.
- Sill active channel and corner of fixed panel interlocker intersection.

## 5.10 Hardware:

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
Shoot bolt system	1	Active lock stile - Lock handle located 37.25" from bottom of the stile. When actuated, the handle engages shot bolts at the top and bottom. Each shoot bolt engaged its respective SS metal keeper fastened to the inside face of head and sill respectively.
PVC anti-lift	1	5/8" high by 52.25" long inserted into head active channel above the active panel
Tandem steel rollers in acetal plastic (POM) housing	4	Active panel bottom rail - one roller 6" from each end and 14.75" on center in the field.

## 5.11 Construction:

- Frame members are not joined to each other. Each member is independently anchored to the rough opening.
- 2.88" aluminum end dam at each end of sill and head secured with a pair of #8 x 0.625" screws.
- All panel corners mechanically joined with two (2) #8 x 2" PFH screws per corner.
- Refer to BOM regarding screw through aluminum reinforcement block (stile spacer clip) at active lock stile and fixed jamb stile.

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## 5.11 Construction: (Continued)

- Fixed panel was anchored to the frame with an aluminum "L" clip (fixed panel clip) at head and sill. The "L" clip fit into the fixed interlock extrusion hollow. The horizontal leg of each clip was fastened to the sill and head respectively with a pair of #10 x 0.625" PPH screws. The vertical leg was fastened with the panel corner screw.
- Aluminum channel covers were applied to fixed channels as follows: sill, head, and active jamb. The sill and head covers fit between the active jamb and fixed interlock. Aluminum channel cover was also applied to the fixed active channel.
- The sill active channel contained four (4) rigid PVC spacers, two (2) 20" long and two (2) 28" long. An aluminum extrusion (sill track guide) containing SS roller track sat on top of the PVC spacers. The spacers were set so as to not block weepage.
- The sill fixed channel contained four (4) rigid PVC spacers, two (2) 20" long and two (2) 22" long and placed so as to not block the weep holes.
- The fixed interlock and active interlock stiles each contained a plastic plug and each was fastened with their respective corner screws.

## 5.12 Reinforcement:

<i>Material</i>	<i>Part #</i>	<i>Location</i>
Aluminum extrusion	S100 Interlock	Fixed interlock
Aluminum extrusion	S100 Interlock	Active interlock

## 5.13 Installation:

<i>Location on frame</i>	<i>Anchor type</i>	<i>Spacing</i>
Frame sill, head and jambs 6" from each end, 12" o.c. to the wooden rough opening	#10 x 3" PFH	6" from each end and 12" on center; screws were staggered between fixed and active channels.

**6.0 - Test procedures and results:** All testing procedures were performed in accordance with the performance requirements of the test specifications referenced in paragraph 3.0 of this report. The number preceding each test listed below refers to the corresponding section in the NAFS.

### 9.3.1 - Operation Force (ASTM E2068-00(2016))

<b>Test Description</b>	<b>Results</b>	<b>Allowed</b>	<b>Comments</b>
Maximum force to initiate motion	152.5 N (34.30 lbf)	180 N (40.47 lbf)	
Maximum force to maintain motion	40.03 N (9.00 lbf)	115 N (25.85 lbf)	

### 9.3.2 - Air Infiltration (ASTM E283-04(2012))

<b>Test Description</b>	<b>Results</b>	<b>Allowed</b>	<b>Comments</b>
75 Pa differential pressure	0.65 L/s*m <sup>2</sup>	1.0 L/s*m <sup>2</sup>	
1.57 psf differential pressure	0.13 cfm/ft <sup>2</sup>	0.20 cfm/ft <sup>2</sup>	
The tested specimen meets the performance levels specified in AAMA/WDMA/CSA 101/1.S.2/A440 for air leakage resistance.			

### 9.3.2 - Air Exfiltration (ASTM E283-04(2012))

<b>Test Description</b>	<b>Results</b>	<b>Allowed</b>	<b>Comments</b>
75 Pa differential pressure	0.15 L/s*m <sup>2</sup>	1.0 L/s*m <sup>2</sup>	
1.57 psf differential pressure	0.03 cfm/ft <sup>2</sup>	0.20 cfm/ft <sup>2</sup>	
The tested specimen meets the performance requirements specified in AAMA/WDMA/CSA 101/ I.S.2/A440 for air leakage resistance.			

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## 9.3.3 - Water Penetration (ASTM E547-00(2016))

Test Description	Results	Allowed	Comments
DP40 - 290 Pa (6.06 psf)	No water penetration	No water penetration	1

## 9.3.4.2 - Uniform Load Deflection at Design Pressure (ASTM E330-14)

Test Description	Results	Allowed	Comments
DP40 - 1920 Pa (40.10 psf)Pos	8.89 mm (0.35")	16.51 mm (0.65")	2
DP40 - 1920 Pa (40.10 psf)Neg	10.67 mm (0.42")	16.51 mm (0.65")	2

## 9.3.4.3 - Uniform Load Structural at 1.5 x Design Pressure (ASTM E330-14)

Test Description	Results	Allowed	Comments
OL for DP40 - 2880 Pa (60.15 psf)Pos	0.25 mm (0.01")	8.64 mm (0.34")	2
OL for DP40 - 2880 Pa (60.15 psf)Neg	0.00 mm (0.00")	8.64 mm (0.34")	2

## 9.3.5 - Forced Entry Resistance (ASTM F842-17 & CAWM 300-96)

Test Description	Results	Allowed	Comments
ASTM F842 Type A D and CAWM Type I	No Entry	No Entry	Grade 25

## 9.3.6.3 - Deglazing Test

Test Description	Results	Allowed	Comments
Active Sash Pull Stile - 320 N (71.94 lbf)	26%	Less than 90% of glazing bite	
Active Sash Rail - 230 N (51.71 lbf)	30%	Less than 90% of glazing bite	

Comment #1 - Tested without insect screen.

Comment #2 - Deflection measurement taken from interlocks.

Testing was witnessed by: Roman Aguiniga and Mario Salazar with CRL and Jim Cruz and Adam Teoh with FTL

For a complete description of the tested sample, refer to the attached forty (40) pages consisting of a bill of materials, cross section drawings, and individual die drawings. This report is complete only when all the above referenced bill of materials and drawings are attached.

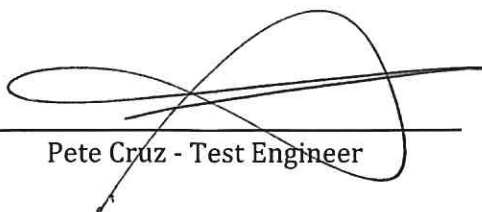
The bill of materials, cross section drawings, and die drawings of frame and sash members are on file and have been compared to the sample submitted. Test sample sections, bill of materials, drawings and a copy of this report will be retained at the test laboratory for four years.

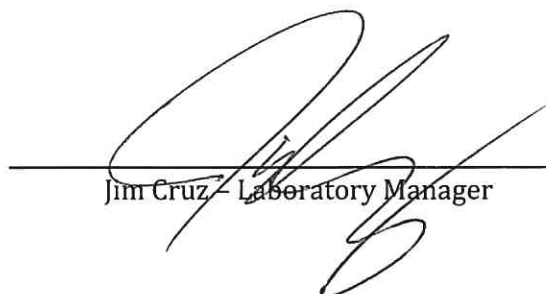
This test report may not be modified in any way without the written consent of Fenestration Testing Laboratory, Inc (FTL).

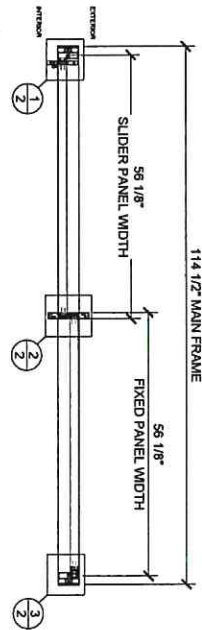
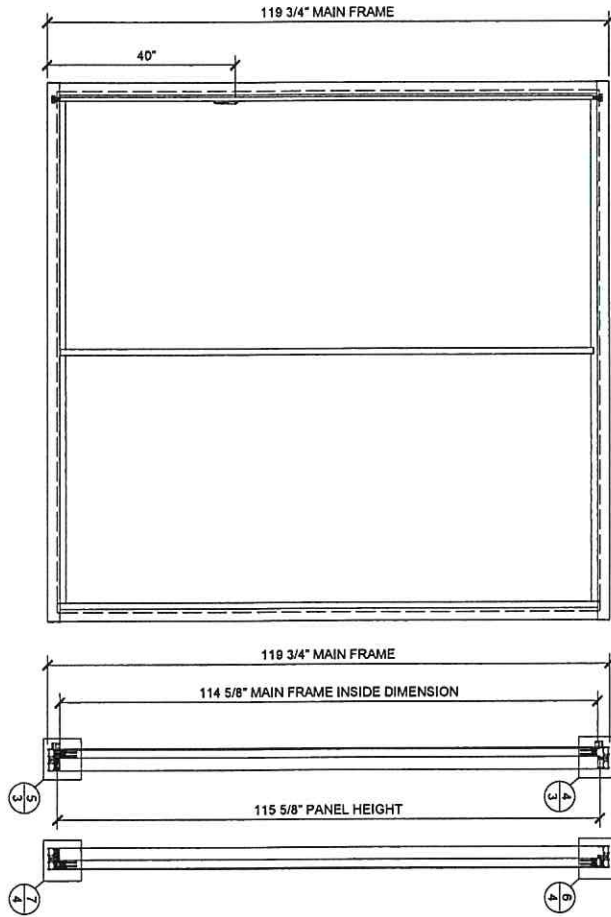
The preceding test results relate only to the tested specimen and were obtained by using the applicable test methods listed in section 3.0 and 6.0 above. This report does not constitute certification of this product or an endorsement by this laboratory. It is the property of the client named in section 1.0 above. Certification can only be granted by an approved administrator and/or validator.

**Test Completion Date:** January 12, 2021

**Report Completion Date:** January 28, 2021

  
Pete Cruz - Test Engineer

  
Jim Cruz - Laboratory Manager



PALISADES S100 SLIDER CONFIGURATION	
PTC#	100003
CUSTOMER PO #	CRLAURENCE Co, Inc
SYSTEM	S100
FRAME & PANEL FINISH	PAVE BRONZE ANODIZE - CLASS 1
HARDWARE FINISH	BLACK
SEAL	PAVED
CONFIGURATION	NO
GLAZING	*INSULATED
DRY	1 ONE TRUS
CATCHLOCK	

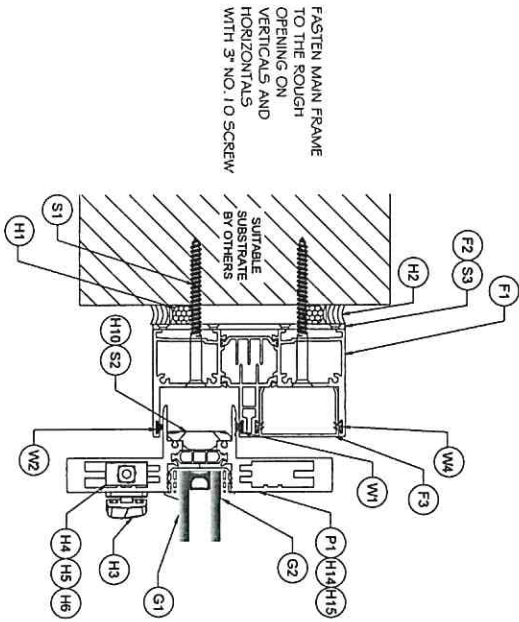
**FENESTRATION TESTING LAB**  
 REPORT NO: T21-063  
 DATE: 7/30/21

DATE: 1/22/2021  
 DRAWN BY: RJ  
 CHECKED BY: RA  
 SCALE: AS SHOWN  
 JOB #: PTC980932  
 PAGE 1 of 5

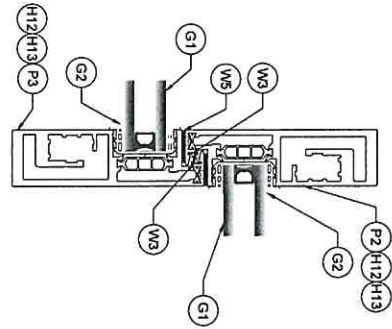
Glazing Contractor:  
 Job Name: PALISADES S100 SLIDING DOOR SYSTEM

**CRL**  
 C.R. LAURENCE CO.  
 ARCHITECTURAL PRODUCTS  
 2100 E. 38TH Street, Los Angeles, CA 90055  
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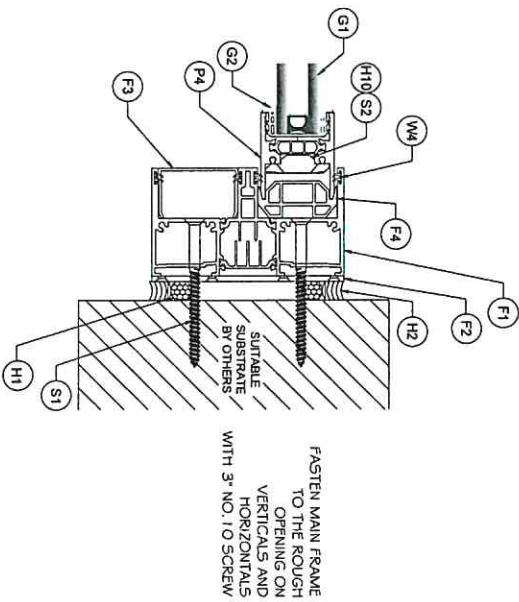
REVISIONS  
 ISO9000



1 SLIDER JAMB DETAIL  
ARCH REF: NONE



2 INTERLOCK DETAIL  
ARCH REF: NONE




3 FIXED JAMB DETAIL  
ARCH REF: NONE

**FENESTRATION TESTING LAB**

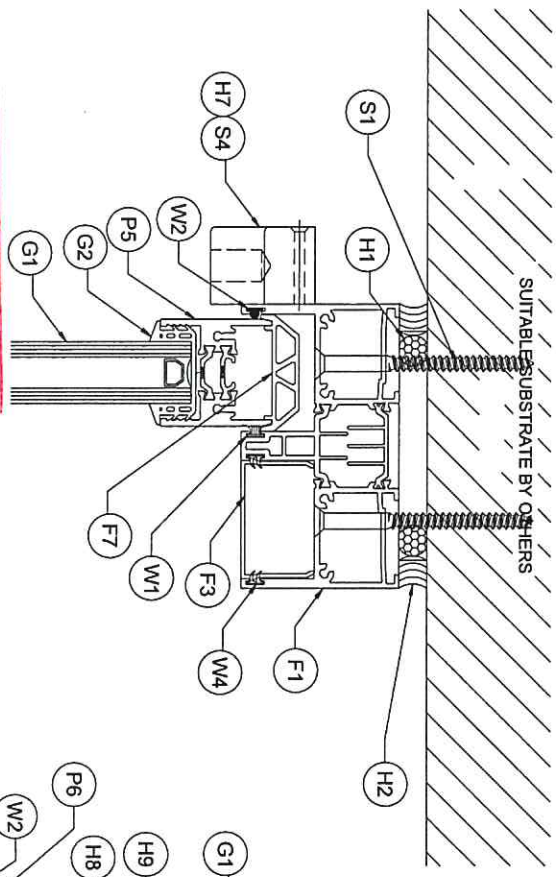
REPORT NO: T21-003

DATE: 7/30/21

	<p>Job Name</p> <p><b>PALISADES S100</b></p> <p><b>SLIDING DOOR SYSTEM</b></p>	 <p><b>C.R. LAURENCE CO.</b></p> <p><b>ARCHITECTURAL PRODUCTS</b></p> <p>2100 E. 38TH Street, Los Angeles, CA 90058</p> <p>www.crlaurence.com</p>	<p>REVISIONS</p>
Glazing Contractor:			
DATE: 1/22/2021			
DRAWN BY: RJ			
CHECKED BY: RA			
SCALE: AS SHOWN			
JOB #: PTC990932			
PAGE 2 OF 5			

# 6 HEAD DETAIL @ SLIDER

ARCH REF: NONE

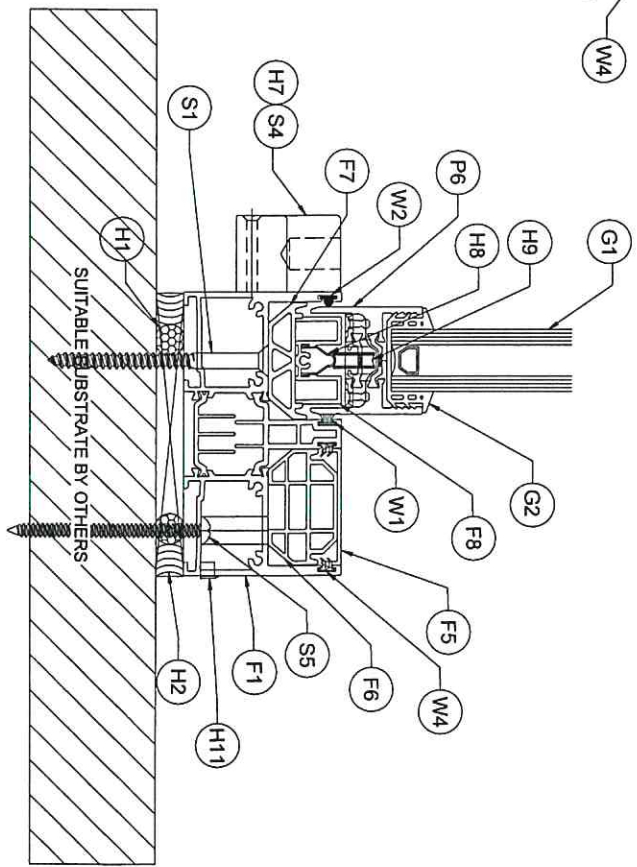


SUITABLE SUBSTRATE BY OTHERS

FASTEN MAIN FRAME TO THE ROUGH OPENING ON VERTICALS AND HORIZONTALS WITH 3" NO. 10 SCREW

**FENESTRATION TESTING LAB**  
 REPORT NO: T21-003  
 DATE: 7-30-21

FASTEN MAIN FRAME TO THE ROUGH OPENING ON VERTICALS AND HORIZONTALS WITH 3" NO. 10 SCREW



SUITABLE SUBSTRATE BY OTHERS

# 7 SILL DETAIL @ SLIDER

ARCH REF: NONE

REVISIONS

**CRL**  
 C.R. LAURENCE CO.  
 ARCHITECTURAL PRODUCTS  
 2100 E. 38TH Street, Los Angeles, CA 90058  
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Job Name: PALISADES S100 SLIDING DOOR SYSTEM

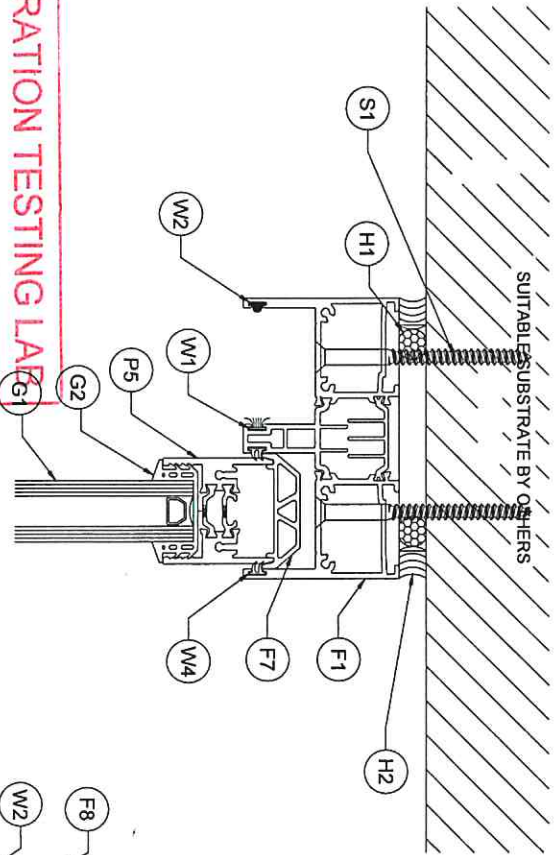
Glazing Contractor:  
 DATE: 1/22/2021  
 DRAWN BY: RJ  
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 SCALE: AS SHOWN  
 JOB #: PTC990932

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# 6 HEAD DETAIL @ FIXED PANEL

ARCH REF: NONE



SUITABLE SUBSTRATE BY OTHERS

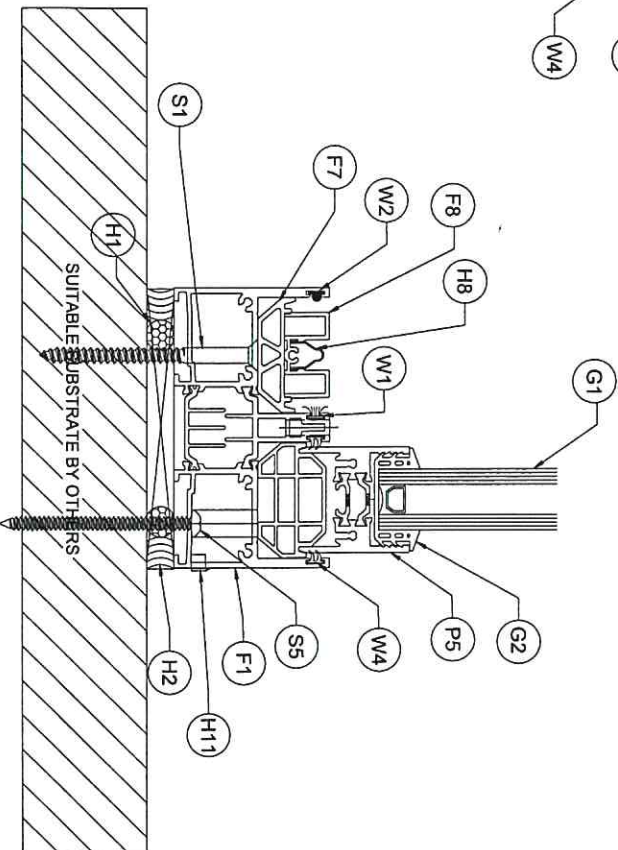
FASTEN MAIN FRAME TO THE ROUGH OPENING ON VERTICALS AND HORIZONTALS WITH 3" NO. 10 SCREW

**FENESTRATION TESTING LAB**  
 REPORT NO: 721-003  
 DATE: 7/30/21

FASTEN MAIN FRAME TO THE ROUGH OPENING ON VERTICALS AND HORIZONTALS WITH 3" NO. 10 SCREW

# 7 SILL DETAIL @ FIXED PANEL

ARCH REF: NONE



SUITABLE SUBSTRATE BY OTHERS

<p>REVISIONS</p>		<p><b>CRL</b>                  C.R. LAURENCE CO.                  ARCHITECTURAL PRODUCTS                  2100 E. 38TH Street, Los Angeles, CA 90058                  www.crlaurence.com</p>	<p>Job Name:</p> <p>PALISADES S100                  SLIDING DOOR SYSTEM</p>	<p>Glazing Contractor:</p>
<p>DATE: 1/22/2021</p> <p>DRAWN BY: RJ</p> <p>CHECKED BY: RA</p> <p>SCALE: AS SHOWN</p> <p>JOB #: PTC990932</p>	<p>PAGE 4 OF 5</p>			

# FENESTRATION TESTING LAB

REPORT NO: **T21-003**

DATE: **7/30/21**

ITEM		PT. NO.	PART DESCRIPTION
F1	MAIN FRAME	S100TRACK2_	S100 - Double Track , Head, Jambs, Sill
F2		S100DAMR2	S100- End dam, Raised Double Track
F3		1S250_	Deep Snap Filler
F4		S100SPACERJ	S100 - Jamb PVC Spacer
F5		S100SNAP_	S100 - Sill Snap Filler
F6		S100SPACERL	S100 - Large PVC Spacer
F7		S100SPACERS	S100 - Small PVC Spacer, Anti Lift Spacer
F8		S100GU1DE_	S100 - Sill Track Guide
P1	PANEL COMPONENTS	S100ST1LED_	S100 - Lead Stile, Double Handle
P2		S100INTERLOCK_	S100 - Fixed Interlock
P3		S100INTERLOCK_	S100 - Slider Interlock
P4		S100ST1LE_	S100 - Fixed Stile
P5		S100RA1L_	S100- Top Rails / Fixed Bottom Rail
P6		S100RA1L_	S100 - Slider Bottom Rail
W1	WEATHERSTRIP / GASKET	W02733012	Tri-Fin with Strip, .270" X .250"- Slider
W2		NP942	Rigid Polyethylene Strip, Slider
W3		S100G1F	S100 - 1 Finger Gasket
W4		VY002S	2 Finger Gasket
W5		74418X34BL	Adhesive Backed Foam Gasket
S1	FASTENERS	SMS	NO. 10 X 3" FLAT HEAD SHEET METAL SCREW
S2		#8 SMS	NO. 8 X 2" Flat Head Sheet Metal Screw Stainless - Fastens Stiles and Interlockers to Top and Bottom Rails.
S3		8X58FHPSMS	NO. 8 X 5/8" Flat Head, Phillips Sheet Metal Screw, 18-8
S4		1024X114SHCSS	10-24 X 1-1/4" Socket Head Cap Screw Scw SS
S5		SMS	NO. 10 X 3" PAN HEAD SHEET METAL SCREW - Fastens frame to substrate
G1	GLAZING		1/4" TEMPERED GLASS - 1/2" ALUMINUM MILL SPACER - 1/4" TEMPERED GLASS
G2		S100GD	S100- Glazing Gasket
H1	HARDWARE / MISC	EF12C	1/2" CLOSED CELL BACKER ROD
H2		DC795BL	DOW CORNING 795 SILICONE
H3		S100CATCHHANDLEB	S100 - Catch Handle (304 SS), Black Finish
H4		S100CATCHBODY	S100- Catch Body
H5		S85CATCHBOLT	S85/S100 Catch Bolt
H6		1420TRSS316ASTMA19396	ASTM A193 Grade B8M Type 316 SS Threaded Rod 1/4"-20 Thread, 8' Length
H7		S100CATCHREC1	S100- FLUSH CATCH RECEIVER
H8		EL103	Heavy Duty 0.032" Thick Stainless Track Insert
H9		S100BROLLER	S100- Bottom Roller
H10		S100SCL1P	S100- Stile Shear Clip
H11		WH27633	Weep Hole Cover & Flap
H12		S100COVER1NTLA	S100 - Interlock Cover / Bolt Guide A
H13		S100COVER1NTLB	S100 - Interlock Cover / Bolt Guide B
H14		S100COVERHA	S100 - Handle Cover / Bolt Guide A
H15		S100COVERHB	S100 - Handle Cover / Bolt Guide B
		S100FXCL1P	S100 Fixed Panel Clip
		UB3000	Weep Hole Baffle
		S100HPLUG	S100 - Nylon Plug for Head/interlock Cavity
		S100DRBUMPER	S100 - Tight Grip Push-In Bumper 9/32" High, SBR

DATE: 1/22/2021  
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Glazing Contractor:  
 Job Name:

**PALISADES S100  
 SLIDING DOOR SYSTEM**

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