

CR LAURENCE CO., INC. THERMAL PERFORMANCE TEST REPORT

SCOPE OF WORK

S100 SLIDING PATIO DOOR

REPORT NUMBER

L8960.01-301-46 R0

TEST DATE

03/11/21

ISSUE DATE

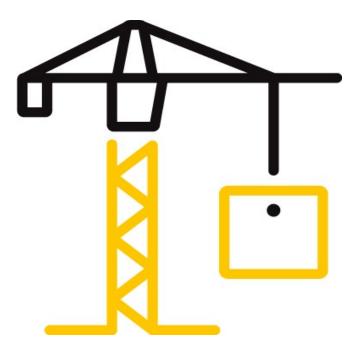
08/18/21

PAGES

36

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-2822(a) (07/01/20) ©2017 INTERTEK





Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

REPORT ISSUED TO

CR LAURENCE CO., INC. 2100 East 38th Street Vernon, California 90058

SECTION 1

SCOPE

SERIES/MODEL: \$100 TYPE: Sliding Patio Door

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by CR Laurence Co., Inc. to evaluate the thermal performance per NFRC 102-2020. Results obtained are tested values and were secured by using the designated test method. Testing was conducted at Intertek B&C test facility in Fresno, California.

Intertek B&C will service this report for the entire test record retention period. The test record retention period ends five years after the test date. Test records, such as detailed drawings, datasheets, or other pertinent project documentation, will be retained for the entire test record retention period. Representative samples of the test specimen will be retained by Intertek B&C for a minimum of two and a half years from the submittal date to the Inspection Agency and no more than five years from the test date.

For INTERTEK B&C:

COMPLETED BY William Simon Smeds **REVIEWED BY** Kenny C. White **Business Process** TITLE **Technician** TITLE Manager, IIRC KC. White **SIGNATURE SIGNATURE** 08/18/21 DATE 08/18/21 DATE

WSS:ss

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample(s) tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 2

SUMMARY OF TEST RESULTS

Standardized U-factor (Ust): 0.36 Btu/hr·ft²·F (CTS Method)

SECTION 3

TEST SPECIMEN SUMMARY

SERIES/MODEL	S100	
TYPE	Sliding Patio Door	
OVERALL SIZE	78-3/4" x 78-3/4" (2000 mm x 2000 mm) (Model Size)	
NFRC STANDARD SIZE	78.7" x 78.7" (2000 mm wide x 2000 mm high)	
TEST SAMPLE SUBMITTED BY	CRL - Los Angeles, California	
TEST SAMPLE SUBMITTED FOR	Validation for Initial Certification (Production Line Unit) &	
	Plant Qualification	

SECTION 4

TEST METHOD

The specimens were evaluated in accordance with the following:

NFRC 102-2020, Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems

SECTION 5

MATERIAL SOURCE/INSTALLATION

The test specimen was provided by CRL - Los Angeles, California.

The test sample was installed in a vertical orientation, the exterior of the specimen was exposed to the cold side.

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
William Simon Smeds	Intertek B&C



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 7

TEST SAMPLE DESCRIPTION

Frame

MATERIAL	AT (1.09"): Aluminum with Thermal Breaks - All Members			
SIZE	78-3/4" x 78-3/4" (Model Size)			
DAYLIGHT OPENING	N/A GLAZING METHOD N/A			
EXTERIOR COLOR	Black EXTERIOR FINISH Anodized			
INTERIOR COLOR	Black INTERIOR FINISH Anodized			
CORNER JOINERY	Square Cut / No Fasteners / Unsealed			

Exterior Panel

MATERIAL	Rails - AT (0.57"): Aluminum with Thermal Breaks			
	Jamb Stile - AT (0.82"): Aluminum with Thermal Breaks			
	Meeting Stile - AU (0.19"): Aluminum with Thermal Improvement			
SIZE	38-1/4" x 74-5/8"			
DAYLIGHT OPENING	34-1/2" x 70-1/2" GLAZING METHOD Channel			
EXTERIOR COLOR	Black EXTERIOR FINISH Anodized			
INTERIOR COLOR	Black INTERIOR FINISH Anodized			
CORNER JOINERY	Square Cut / Screws / Sealed			

Interior Panel

MATERIAL	Rails - AT (0.57"): Aluminum with Thermal Breaks			
	Jamb Stile - AT (0.82"): Aluminum with Thermal Breaks			
	Meeting Stile - AU (0.19"): Aluminum with Thermal Improvement			
SIZE	38-1/4" x 74-5/8"			
DAYLIGHT OPENING	34-1/2" x 70-1/2" GLAZING METHOD Channel			
EXTERIOR COLOR	Black EXTERIOR FINISH Anodized			
INTERIOR COLOR	Black INTERIOR FINISH Anodized			
CORNER JOINERY	Square Cut / Screws / Sealed			

Glazing Information

LAYER 1	1/4"	PPG Solarban 70XL (e=0.018*, #2)	
GAP	0.52"	A1-D: Aluminum Spacer	90% Argon*
LAYER 2	1/4"	Clear	
GAS FILL I	METHOD	Single-Probe Method*	

^{*}Stated per the client/manufacturer and can affect the validity of results N/A Non-Applicable



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 7 (CONTINUED)

TEST SAMPLE DESCRIPTION (CONTINUED)

Weatherstripping

DESCRIPTION	QUANTITY	LOCATION
Vinyl leaf gasket	1 Row	Each meeting stile.
Foam gasket	1 Row	Each meeting stile.
Dual leaf vinyl gasket	2 Rows	Head. Sill. Lock jamb.
Dual leaf vinyl gasket	4 Rows	Fixed jamb.
Polypile with center fin	1 Row	Head. Sill. Lock jamb.
Rubber gasket	1 Row	Head. Sill. Lock jamb.

Hardware

DESCRIPTION	QUANTITY	LOCATION
Roller assembly	2	Bottom rail of the interior panel.
Handle with two point lock assembly	1	Lock stile of the interior panel.
Keeper	2	Head & sill.

Drainage

DRAINAGE METHOD	SIZE	QUANTITY	LOCATION
Weephole with cover	1-1/4" x 1/8"	4	Sill face.
Weephole	1-5/8" x 1/4"	2	Exterior sill track.
Weephole	1-1/2" x 1/4"	2	Center sill leg.



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 8

THERMAL TRANSMITTANCE (U-FACTOR): MEASURED TEST DATA

Heat Flows

1.	Total Measured Input into Metering Box (Qtotal)	1239.89 Btu/hr
2.	Surround Panel Heat Flow (Qsp)	62.97 Btu/hr
3.	Surround Panel Thickness	5.00 inches
4.	Surround Panel Conductance	0.0358 Btu/hr·ft ² ·F
5.	Metering Box Wall Heat Flow (Qmb)	4.74 Btu/hr
6.	EMF vs Heat Flow Equation (equivalent information)	0.0205*EMF + 0.000
7.	Flanking Loss Heat Flow (Qfl)	33.27 Btu/hr
8.	Net Specimen Heat Loss (Qs)	1138.91 Btu/hr

Areas

1.	Test Specimen Projected Area (As)	43.07 ft ²
2.	Test Specimen Projected Frame Area (Af)	9.29 ft ²
3.	Test Specimen Projected Glazing Area (Ag)	33.78 ft ²
4.	Metering Box Opening Area (Amb)	69.44 ft ²
5.	Metering Box Baffle Area (Ab1)	60.56 ft ²
6.	Surround Panel Interior Exposed Area (Asp)	26.37 ft ²

Test Conditions

1.	Average Metering Room Air Temperature (th)	69.79 F
2.	Average Cold Side Air Temperature (tc)	-0.64 F
3.	Average Guard/Environmental Air Temperature	74.00 F
4.	Metering Room Average Relative Humidity	12.40 %
5.	Metering Room Maximum Relative Humidity	12.52 %
6.	Metering Room Minimum Relative Humidity	12.28 %
7.	Measured Cold Side Wind Velocity (Perpendicular Flow)	11.22 mph
8.	Measured Warm Side Wind Velocity (Parallel Flow)	0.04 mph
9.	Measured Static Pressure Difference Across Test Specimen	0.00" ± 0.04" H ₂ O

Average Surface Temperatures

1.	Metering Room Surround Panel	66.63 F
2.	Cold Side Surround Panel	-0.10 F

Results

1.	Thermal Transmittance of Test Specimen (Us)	0.38 Btu/hr·ft ² ·F
2.	Standardized Thermal Transmittance of Test Specimen (Ust)	0.36 Btu/hr·ft ² ·F



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 9

THERMAL TRANSMITTANCE (U-FACTOR): CALCULATED TEST DATA

CTS Method Results

1.	Warm Side Surface Emittance of CTS (e1)	0.84	
2.	Warm Side Area-Weighted Surface Emittance of Specimen	0.80	
	Frame (ef1)		
3.	Warm Side Area-Weighted Surface Emittance of Specimen	0.84	
	Glazing (eg1)		
4.	Warm Side Surface Emittance of Surround Panel (esp1)	0.90	
5.	Warm Side Area-Weighted Surface Emittance in View of	0.85	
	the Baffle (es1)		
6.	Warm Side Baffle Emittance (eb1)	0.92	
7.	Cold Side Baffle Emittance (eb2)	N/A	
8.	Equivalent Warm Side Surface Temperature (t1)	51.69	F
9.	Equivalent Cold Side Surface Temperature (t2)	4.47	F
10.	Warm Side Baffle Surface Temperature	69.52	F
11.	Cold Side Baffle Surface Temperature	N/A	F
12.	Measured Warm Side Surface Conductance (hh)		Btu/hr·ft ² ·F
13.	Measured Cold Side Surface Conductance (hc)	5.18	Btu/hr·ft²·F
14.	Test Specimen Thermal Conductance (Cs)		Btu/hr·ft ² ·F
15.	Convection Coefficient (Kc)	0.34	Btu/(hr·ft 2 ·F $^{1.25}$)
16.	Radiative Test Specimen Heat Flow (Qr1)	586.85	Btu/hr
17.	Conductive Test Specimen Heat Flow (Qc1)	552.06	Btu/hr
18.	Radiative Heat Flux of Test Specimen (qr1)		Btu/hr·ft ² ·F
19.	Convective Heat Flux of Test Specimen (qc1)	12.82	Btu/hr·ft²·F
20.	Standardized Warm Side Surface Conductance (hsth)	1.21	Btu/hr·ft ² ·F
21.	Standardized Cold Side Surface Conductance (hstc)		Btu/hr·ft²·F
22.	Standardized Thermal Transmittance (Ust)	0.36	Btu/hr·ft ² ·F

SECTION 10

TEST DURATION

- 1. The environmental systems were started at 13:40 hours, 03/10/21.
- 2. The test parameters were considered stable for two consecutive four hour test periods from 22:16 hours, 03/10/21 to 06:16 hours, 03/11/21.
- 3. The thermal performance test results were derived from 02:16 hours, 03/11/21 to 06:16 hours, 03/11/21.



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 11

GLAZING DEFLECTION

	Interior Panel	Exterior Panel
EDGE GAP WIDTH	0.52"	0.52"
ESTIMATED CENTER GAP WIDTH upon receipt of specimen in laboratory (after stabilization)	0.50"	0.59"
CENTER GAP WIDTH at laboratory ambient conditions on day of testing	0.50"	0.59"
CENTER GAP WIDTH at test conditions	0.44"	0.53"

Glass collapse determined using a digital glass and air space meter

The sample was inspected for the formation of frost or condensation, which may influence the surface temperature measurements. The sample showed no evidence of condensation/frost at the conclusion of the test.

"This test method does not include procedures to determine the heat flow due to either air movement through the specimen or solar radiation effects. As a consequence, the thermal transmittance results obtained do not reflect performances which are expected from field installations due to not accounting for solar radiation, air leakage effects, and the thermal bridge effects that have the potential to occur due to the specific design and construction of the fenestration system opening. The latter can only be determined by in-situ measurements. Therefore, it is important to recognize that the thermal transmittance results obtained from this test method are for ideal laboratory conditions and should only be used for fenestration product comparisons and as input to thermal performance analyses which also include solar, air leakage and thermal bridge effects."

Required annual calibrations for the Intertek B&C, 'thermal test chamber' (ICN 004287) in Fresno, California were last conducted in February 2021 in accordance with Intertek B&C calibration procedure. A CTS Calibration verification was performed February 2021. A Metering Box Wall Transducer and Surround Panel Flanking Loss Characterization was performed December 2020.

The reported Standardized Thermal Transmittance (Ust) was determined using CTS Method, per Section 9.2(A) of NFRC 102.



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 12

CTS CALIBRATION DATA

1.	CTS Test Date	11/07/19
2.	CTS Size	43.06 ft ²
3.	CTS Glass/Core Conductance	0.40 Btu/hr·ft²·F
4.	Warm Side Air Temperature	69.81 F
5.	Cold Side Air Temperature	-0.50 F
6.	Warm Side Average Surface Temperature	55.11 F
7.	Cold Side Average Surface Temperature	3.49 F
8.	Convection Coefficient (Kc)	0.34 Btu/(hr·ft ² ·F ^{1.25})
9.	Measured Cold Side Surface Conductance (hc)	5.18 Btu/hr∙ft²⋅F
10.	Measured Thermal Transmittance	0.32 Btu/hr·ft ² ·F

ANSI/NCSL Z540-2-1997 type B uncertainty for this test was 1.64%.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule also called "Shared Risk Approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

"Ratings included in this report are for submittal to an NFRC licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those options identified on a valid Certificate of Authorization (CA) are to be used for labeling purposes."

The direction of heat transfer was from the interior (warm side) to the exterior (cold side) of the specimen. The ratings were rounded in accordance to NFRC 601, NFRC Unit and Measurement Policy. The data acquisition frequency is 5 minutes.



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

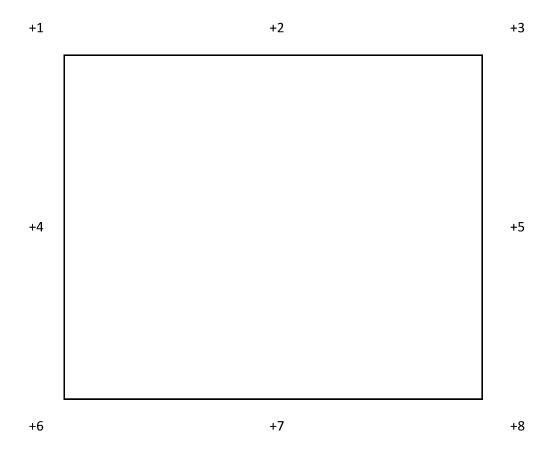
TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 13

SURROUND PANEL WIRING DIAGRAM





Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 14

BAFFLE WIRING DIAGRAM

+1	+2	+3	+4	+5	+6
+7	+8	+9	+10	+11	+12
+13	+14	+15	+16	+17	+18
+19	+20	+21	+22	+23	+24
+25	+26	+27	+28	+29	+30



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 15

SUBMITTAL FORM AND DRAWINGS

The test specimen drawings which follow have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

Version: 07/01/20 Page 12 of 36 RTTDS-R-AMER-Test-2822(a)

NFRC PRODUCT CERTIFICATION PROGRAM

Submittal Form for Test Samples

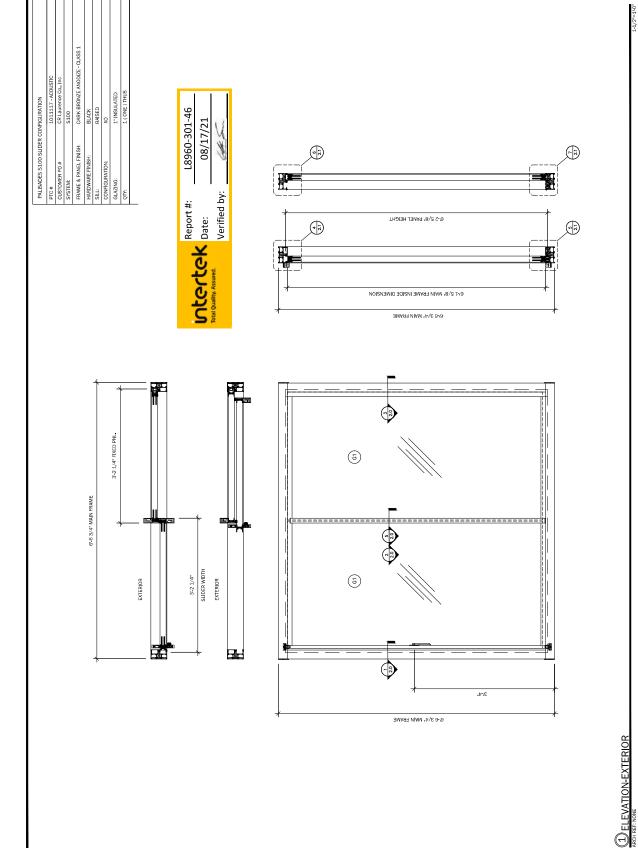
For use by Manufacturers, Lineal Suppliers and Fabricators

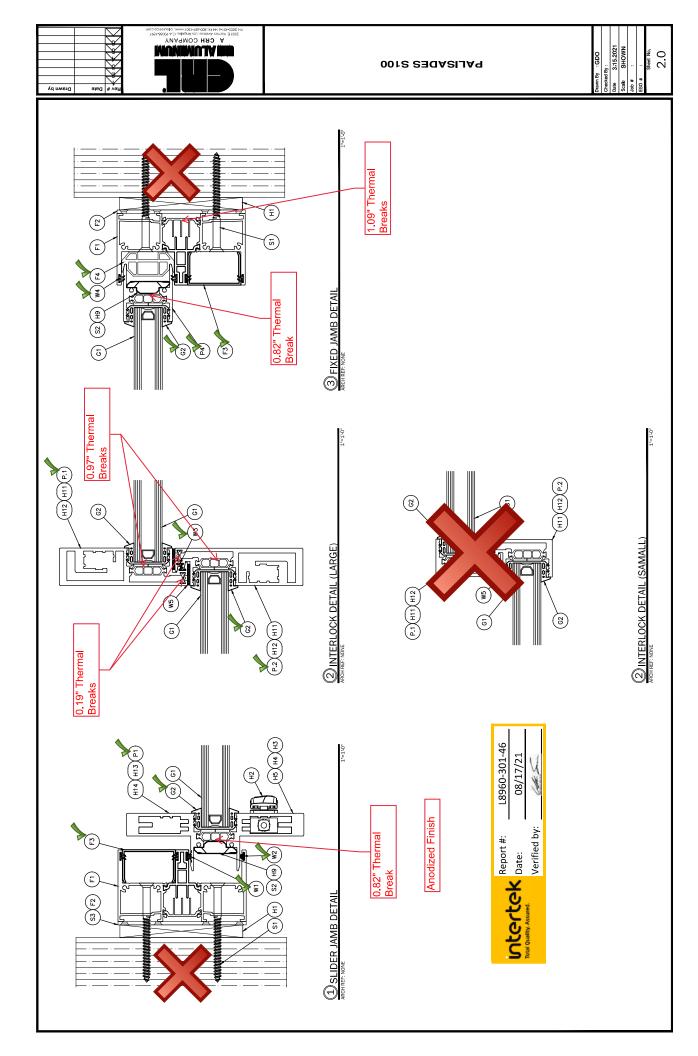


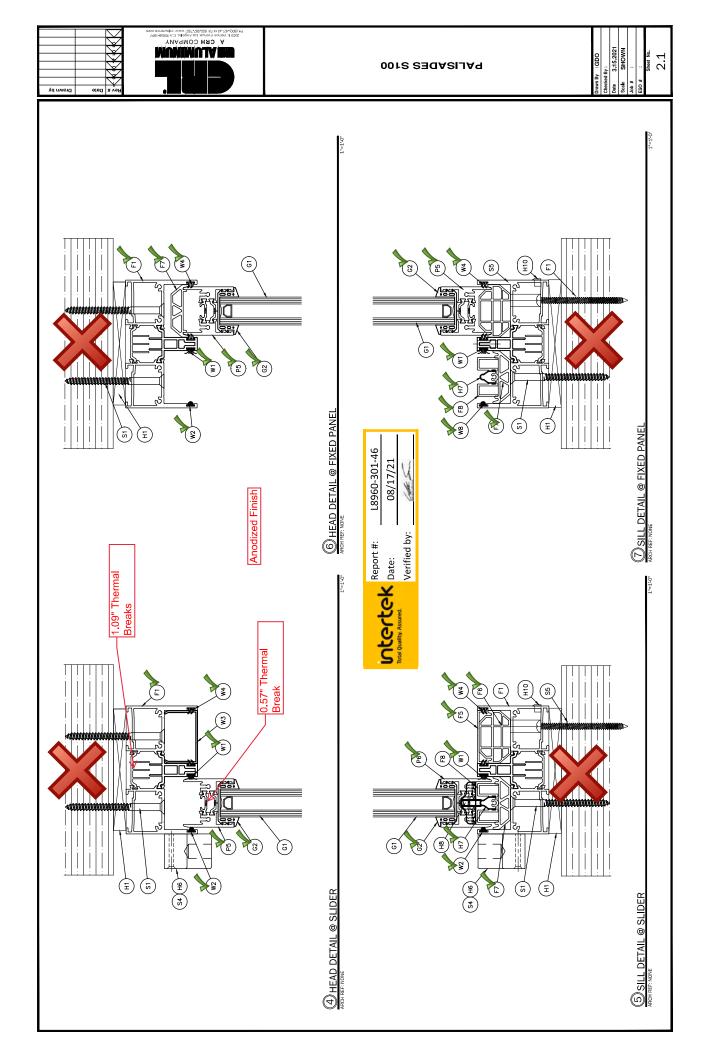
1. Information on Production of the Test Sample (complete <u>ALL</u> fields):									
Manı	ıfacturer:	CRL			Date	of sample manufactur	e: .	3/1/202	1
Plant	Address v	where manufa	actured: 250	3 E. Verno	n Ave.				
City:	Los Angele	es		State:	CA		Zip	Code:	90058
Nam	e of IA:	Associated Labs	5		Phone:	241-565-0593		Fax:	
2. P	oduct Info	rmation (com	plete <u>Applic</u>	BLE field	ds):				
	ng Produc s/Model:	ct Line ID (CP	PD) No.: Palis	ades		Product/Operator Ty _ (Table 4-3 of NFRC			Horizontal Slider
3. Test sample is being submitted for (select <u>ONE</u>):									
a. Validation for Initial Certification (prototype only) no plant qualification									
b. Ualidation for Initial Certification or Recertification (production line unit) & plant qualification									
c. Plant Qualification Only (production line unit)									
d. □ Test Only Alternative (production line unit) & plant qualification									
u	u rest	Only Alternati	ve (productio	n ine ui	iii) & piarii	quaimeation			
I, Garrett Osterode , as the designated agent for do hereby attest that the foregoing information is true to the best of my information, knowledge, and belief. Further, if the unit is identified in Section 3 as a production line unit, I hereby authorize the NFRC-accredited testing laboratory to send a copy of the test report to the IA identified above for plant qualification purposes pursuant to the NFRC Product Certification Program. Signature: Garrett Osterode Date: 3.15.2021									
				or La	boratory	Use Only			
	aboratory	a Dagaiyadı	Intertek 3/3/2021			Test Report	. 4. 1	8060 C	11 201 46
	ate Sample ate Sample	e Received:	3/11/2021					mon Sn	
	odification		None				<i>-y</i>		



Drawn by







enue, Los Angeles, C.A 90058-1897 3 800-587-7501 www. citcurence.com	2503 E. Vernon Av PH (800)-421-6144 FX
КН СОМРАИУ	D ∀
MONIMOT	V MAN



Drawn by



Drawn By	:GDO
Checked By	3y:
Date	3.15.2021
Scale	SHOWN
# qop	
ESO #	
	Sheet No.
	3.0

F1	F2	F3	F4	F5V	FG	
			L8960-301-46	08/17/21	'	
			Report #:	Date:		Verified by:
			-	×		

ITEM		PT. NO.	PART DESCRIPTION
F1		S100TRACK2	S100 - Double Track , Head, Jambs, Sill
F2	31	S100DAMR2	S100- End dam, Raised Double Track
F3	MAS	18250_	Deep Snap Filler
F4	1 EB	S100SPACERJ	S100 - Jamb PVC Spacer
F5V	1 I AN	S100SNAP_	S100 - Sill Snap Filler
F6	V	S100SPACERL	S100 - Large PVC Spacer
F7 X		S100SPACERS	S100 - Small PVC Spacer, Anti Lift Spacer
F8		S100GU1DE_	S100 - Sill Track Guide
P.1	,	S1001NTERLOCKLARGE	S100 - Fixed Interlock
P.2	STN	S1001NTERLOCKLARGE	S100 - Slider Interlock
P1	NE	S100ST1LED_	S100 - Lead Stile, Double Handle
P2	ЛРC	S1001NTERLOCKLARGE	S100 - Fixed Interlock
P3	CON	S1001NTERLOCKLARGE	S100 - Slider Interlock
P4	T3	S100ST1LE_	S100 - Fixed Stile
P5	N∀c	S100RA1L_	S100- Top Rails / Fixed Bottom Rail
P6.	i	S100RA1L_	S100 - Slider Bottom Rail
W		W02733012	Tri-Fin with Strip, .270" X .250"- Slider
W2	dla.	NP942	Rigid Polyethylene Strip, Slider
W3	TSA	S100G1F	S100 - 1 Finger Gasket
W4	LHE	VY002S	2 Finger Gasket
W5	VE∀1	74418X34BL	Adhesive Backed Foam Gasket
	٨		
200		#10x3"SMS-SS	NO. 10 X 3" FLAT HEAD SHEET METAL SCREW
S	SF	#8x2"SMS-SS	FASTENS STILES AND INTERLOCKERS TO TOP AND BOTTOM BAILS
: S	NE	8X58EHPSMS	NO 8 X 5/8" Flat Head Phillips Sheet Metal Screw 18-8
8 8	3TE	100AY11ACHOSC	10-24 X 1-1/4" Snoket Head Can Screw Scew SS
S S	E∀3	CMC	NO 10 X 3" PAN HEAD SHEET METAL SCREW
3			
G1 W			1" IGU 1" 1/4" Solarban 70 XL - 1/2" Kodispace K4SG w/Argon -1/4" CLEAR Temp
G2 •	9N I Z	S100GD	S100- Glazing Gasket
	פרע		
H			Plastic Shim
HZ		S100CATCHHANDLEB	S100 - Catch Handle (304 SS), Black Finish
H3		S100CATCHB0DY	S100-Catch Body
H	0	S85CATCHBOLT	S85/S100 Catch Bolt
HS	SIW	1420TRSS316ASTMA19396	ASTM A193 GRADE B8M TYPE 316 SS THREADED ROD 1/4"-20 THREAD
Не	/3	S100CATCHREC1	S100- FLUSH CATCH RECEIVER
Н7]AA≀	EL103	Heavy Duty 0.032" Thick Stainless Track Insert
8H	DM	S100BROLLER	S100- Bottom Roller
6H	ч∀н	S100SCL1P	S100- Stile Shear Clip
H10	ı	WH27633	Weep Hole Cover & Flap
H11		S100C0VER1NTLA	S100 - Interlock Cover / Bolt Guide A
H12		S100C0VER1NTLB	S100 - Interlock Cover / Bolt Guide B
H13		S100C0VERHA	S100 - Handle Cover / Bolt Guide A
H14		S100C0VERHB	S100 - Handle Cover / Bolt Guide B
		S100FXCL1P	S.S. 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



Telephone: 559-233-8705 Facsimile: 717-764-4129 www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO., INC.

Report No.: L8960.01-301-46 R0

Date: 08/18/21

SECTION 16

REVISION LOG

REVISION #	DATE	PAGES	REVISION
.01 R0	08/18/21	N/A	Original Report Issue