

CR LAURENCE CO, INC.

ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

AAMA 1801 TESTING ON IT451, STOREFRONT WINDOW

REPORT NUMBER

H7645.01-303-11 R0

TEST DATE

11/03/17

ISSUE DATE

11/17/17

RECORD RETENTION END DATE

11/03/21

PAGES

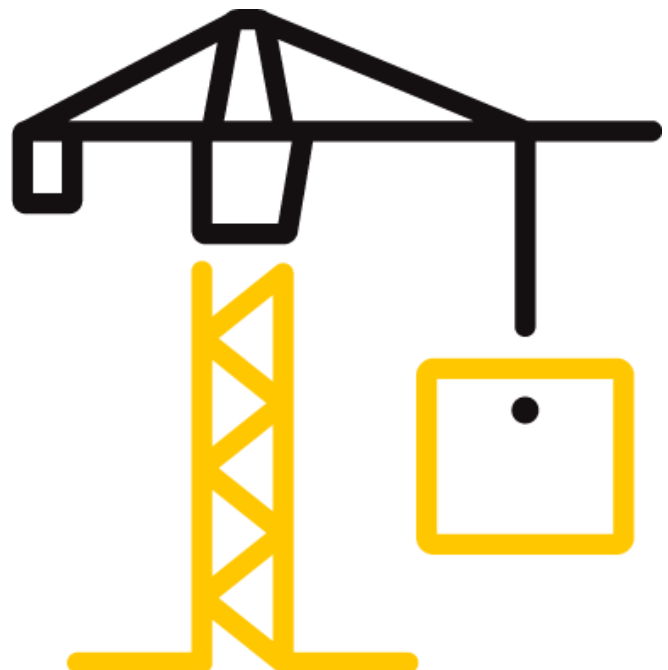
13

DOCUMENT CONTROL NUMBER

ATI 00596 (07/24/17)

RT-R-AMER-Test-2761

© 2017 INTERTEK



TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

REPORT ISSUED TO

CR LAURENCE CO, INC.

2503 East Vernon Avenue
Los Angeles, California 90058

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by CR Laurence Co, Inc. to conduct a sound transmission loss test. Results obtained are tested values and were secured by using the designated test method(s). The complete test data is included herein. The client provided the test specimen. All measurements were conducted in the HT test chambers at Intertek B&C located in Lake Forest, California.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

SERIES/MODEL	IT451
TYPE	Storefront Window
GLAZING (Nominal Dimensions)	1-1/8" IG (1/4" Tempered Exterior, 1/2" Air Space, 3/8" Tempered Interior)
DATA FILE NO.	H7645.01A
STC	36
OITC	31
AIR INFILTRATION AT 1.57 PSF	0.02 cfm/ft ²

For INTERTEK B&C:

COMPLETED BY:	Ryan R. Lau	REVIEWED BY:	Bradlay D. Hunt
TITLE:	Technician II	TITLE:	Laboratory Manager
SIGNATURE:		SIGNATURE:	
DATE:	11/17/17	DATE:	11/17/17

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.



TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

SECTION 3**TEST METHOD(S)**

The specimens were evaluated in accordance with the following:

ASTM E90-09 (2016), *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*

ASTM E413-16, *Classification for Rating Sound Insulation*

ASTM E1332-16, *Standard Classification for Rating Outdoor-Indoor Sound Attenuation*

ASTM E2235-04 (2012), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

AAMA 1801-13, *Voluntary Specification for the Acoustical Rating of Exterior Windows, Doors, Skylights and Glazed Wall Sections*

ASTM E1425-14, *Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems*

ASTM E90-09 (2016), *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*

ASTM E413-16, *Classification for Rating Sound Insulation*

ASTM E1332-16, *Standard Classification for Rating Outdoor-Indoor Sound Attenuation*

ASTM E2235-04 (2012), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

ASTM E283-04 (2012), *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen*

SECTION 4**SPECIMEN INSTALLATION**

A sound transmission loss test was initially performed on a filler wall. The specimen plug was removed from the filler wall assembly. A filler wall-reducing element was used to adjust the test opening size to accommodate the test specimen. The reducing element consisted of a double 2x6 wood stud wall construction with three layers of 5/8" drywall on both sides. The stud cavities in the wall were insulated with two layers of R-19 fiberglass insulation. The specimen was placed on an isolation pad in the custom test opening. Duct seal was used to seal the perimeter of the specimen to the test opening on both sides. The interior side of the specimen, when installed, was approximately 1/4" from being flush with the receive room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing. Operable portions of the test specimen, if any, were cycled at least five times prior to testing.

TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

SECTION 5 EQUIPMENT

The equipment listed below meets the requirements of the test methods stated in Section 3 of this report.

INSTRUMENTATION

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Unit	National Instruments	PXI-4462	Input Card	INT00627	10/16 *
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	INT00395	10/16
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	INT00396	10/16
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	INT00397	10/16
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	INT00239	04/17
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00240	04/17
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00241	04/17
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00242	04/17
Source Room Microphone	PCB piezotronics	378C20	Microphone and Preamplifier	INT00243	04/17
Receive Room Microphone	PBC Piezotronics	378C20	Microphone and Preamplifier	INT00244	04/17
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00245	04/17
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00246	04/17
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00247	04/17
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00228	04/17
Receive Room Environmental Indicator	Comet	T7510	Receive Room	INT00299	10/17
Source Room Environmental Indicator	Comet	T7510	Source Room	INT00300	10/17
Microphone Calibrator	Norsonic	1251	Pistonphone Calibrator	INT00288	06/17

*- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

TEST CHAMBER

	VOLUME	DESCRIPTION
RECEIVE ROOM	231 m ³	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor
SOURCE ROOM	196 m ³	Stationary diffusers only Temperature and humidity controlled

	MAXIMUM SIZE	DESCRIPTION
TL TEST OPENING	4.27 m wide by 3.05 m high	Vibration break between source and receive rooms

N/A-Not Applicable

TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Garrett Osterode	CR Laurence Co, Inc.
Ryan R. Lau	Intertek B&C
Leeland S. Hoover	Intertek B&C

SECTION 7

TEST PROCEDURE

The sensitivity of the microphones was checked before measurements were conducted. The transmission loss values were obtained for a single direction of measurement. Two background noise sound pressure level and five sound absorption measurements were conducted at each of five microphone positions. Two sound pressure level measurements were made simultaneously at each of five microphone positions in the receive and source rooms. The air temperature and relative humidity conditions were monitored and recorded during all measurements.

Data for flanking limit tests, repeatability measurements, and reference specimen tests are available upon request.

The specimen was returned per the client's request.

SECTION 8

ACOUSTICAL TEST CALCULATIONS

Transmission loss (TL) at each 1/3 octave frequency is the average source room sound pressure level minus the average receive room sound pressure level, plus, 10 times the log of the specimen area divided by the sound absorption of the receive room with the sample in place.

STC Rating

To obtain the Sound Transmission Class (STC), read the TL of the contour curve at 500 Hz. The sum of the deficiencies below the contour curve must not exceed 32. The maximum deficiency at any one frequency must not exceed 8.

OITC Rating

The Outdoor-Indoor Transmission Class (OITC) is calculated by subtracting the logarithmic summation of the TL values from the logarithmic summation of the A-weighted transportation noise spectrum stated in ASTM E1332.

TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

SECTION 9
SPECIMEN DESCRIPTION

	FRAME
SIZE	78-3/4" by 78-3/4"
THICKNESS	4-1/2"
CORNERS	Butted
FASTENERS	3/8" x 2" Lag Bolts (18" OC) Head and Sill
SEAL METHOD	DOW Corning 795
MATERIAL	Aluminum
REINFORCEMENT	N/A
THERMAL BREAK MATERIAL	Polyurethane
DAYLIGHT OPENING SIZE	74-3/8" by 36-3/8" (x2)

MEASURED OVERALL INSULATION GLASS UNIT THICKNESS	1.097"
SPACER TYPE	Aluminum

	EXTERIOR SHEET	GAP	INTERIOR SHEET
MEASURED THICKNESS	0.222"	0.512"	0.363"
MUNTIN PATTERN	N/A	N/A	N/A
MATERIAL	Tempered	Air*	Tempered
LAMINATE MATERIAL	N/A	N/A	N/A

GLAZING METHOD	Exterior
GLAZING MATERIAL	Rubber Gasket
GLAZING BEAD MATERIAL	Aluminum

	TYPE	QUANTITY	LOCATION
WEATHERSTRIP	Rubber gasket (1/2" by 3/8")	1	Perimeter of fixed panels
HARDWARE	N/A	N/A	N/A
DRAINAGE	N/A	N/A	N/A

TOTAL WEIGHT (lbs)	AVERAGE WEIGHT (lbs / ft ²)
420	9.82

* - Stated per Client/Manufacturer, N/A-Not Applicable

TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

SECTION 10

TEST RESULTS

ASTM E90 AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE	11/03/17				
DATA FILE NO.	H7645.01A				
CLIENT	CR Laurence Co., Inc.				
DESCRIPTION	Series/Model: IT451 Storefront with 1-1/8" IG(3/8" interior, 1/2" air space, 1/4" exterior)				
SPECIMEN AREA	4.03 m ²	RECEIVE TEMP.	19.2 °C	SOURCE TEMP	18.9 °C
TECHNICIAN	Leeland S. Ho	RECEIVE HUMIDITY	54%	SOURCE HUMIDITY	52%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION (m ²)	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	47.1	4.4	103	77	26	2.04	-
100	36.8	4.8	105	80	25	1.68	-
125	41.5	5.1	105	80	24	1.00	0
160	44.2	5.2	103	76	26	1.13	0
200	37.1	6.5	105	80	23	0.52	3
250	27.1	7.1	106	76	28	0.50	1
315	21.2	6.9	106	74	29	0.66	3
400	21.8	5.9	105	69	35	0.41	0
500	18.2	5.2	105	66	38	0.25	0
630	18.8	5.5	106	67	38	0.44	0
800	21.3	5.6	106	66	38	0.22	0
1000	14.8	5.8	107	69	36	0.31	3
1250	14.9	6.1	105	67	35	0.17	5
1600	16.7	6.6	104	66	36	0.21	4
2000	15.2	7.7	101	63	35	0.26	5
2500	12.1	8.7	101	61	37	0.24	3
3150	11.7	10.2	100	57	39	0.29	1
4000	9.0	12.6	99	50	44	0.22	0
5000	8.0	16.1	98	45	47	0.43	-
STC RATING	36 (Sound Transmission Class)						
DEFICIENCIES	28 (Sum of Deficiencies)						
OITC RATING	31 (Outdoor-Indoor Transmission Class)						

- Notes:**
- 1) Receive Room levels less than 5 dB above the Background levels are red.
 - 2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
 - 3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

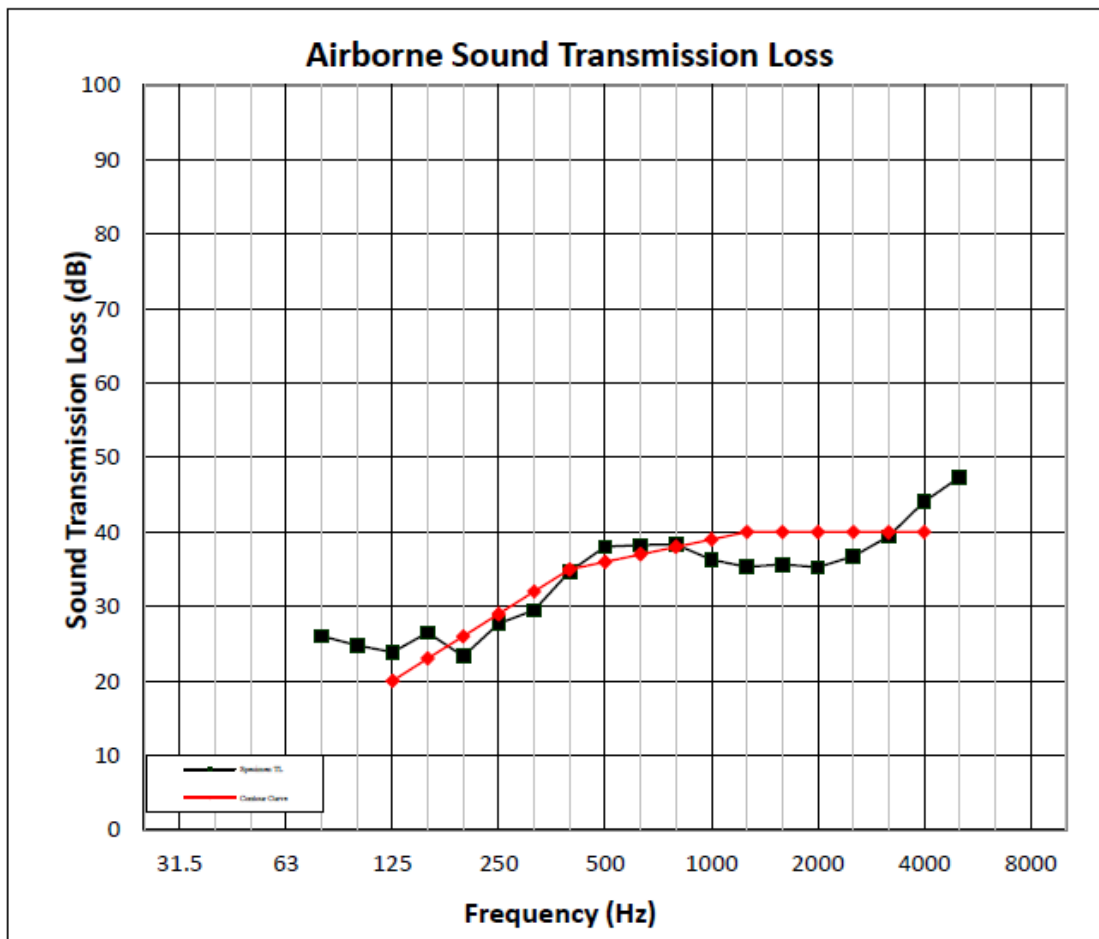
SECTION 11

RESULTS GRAPH

ASTM E90 AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE	11/03/17					
DATA FILE NO.	H7645.01A					
CLIENT	CR Laurence Co., Inc.					
DESCRIPTION	Series/Model: IT451 Storefront with 1-1/8 "IG(3/8" interior, 1/2" air space, 1/4" exterior)					
SPECIMEN AREA	4.03 m ²	RECEIVE TEMP.	19.2 °C	SOURCE TEMP	18.9 °C	
TECHNICIAN	Leeland S. Ho	RECEIVE HUMIDITY	54%	SOURCE HUMIDIT	52%	

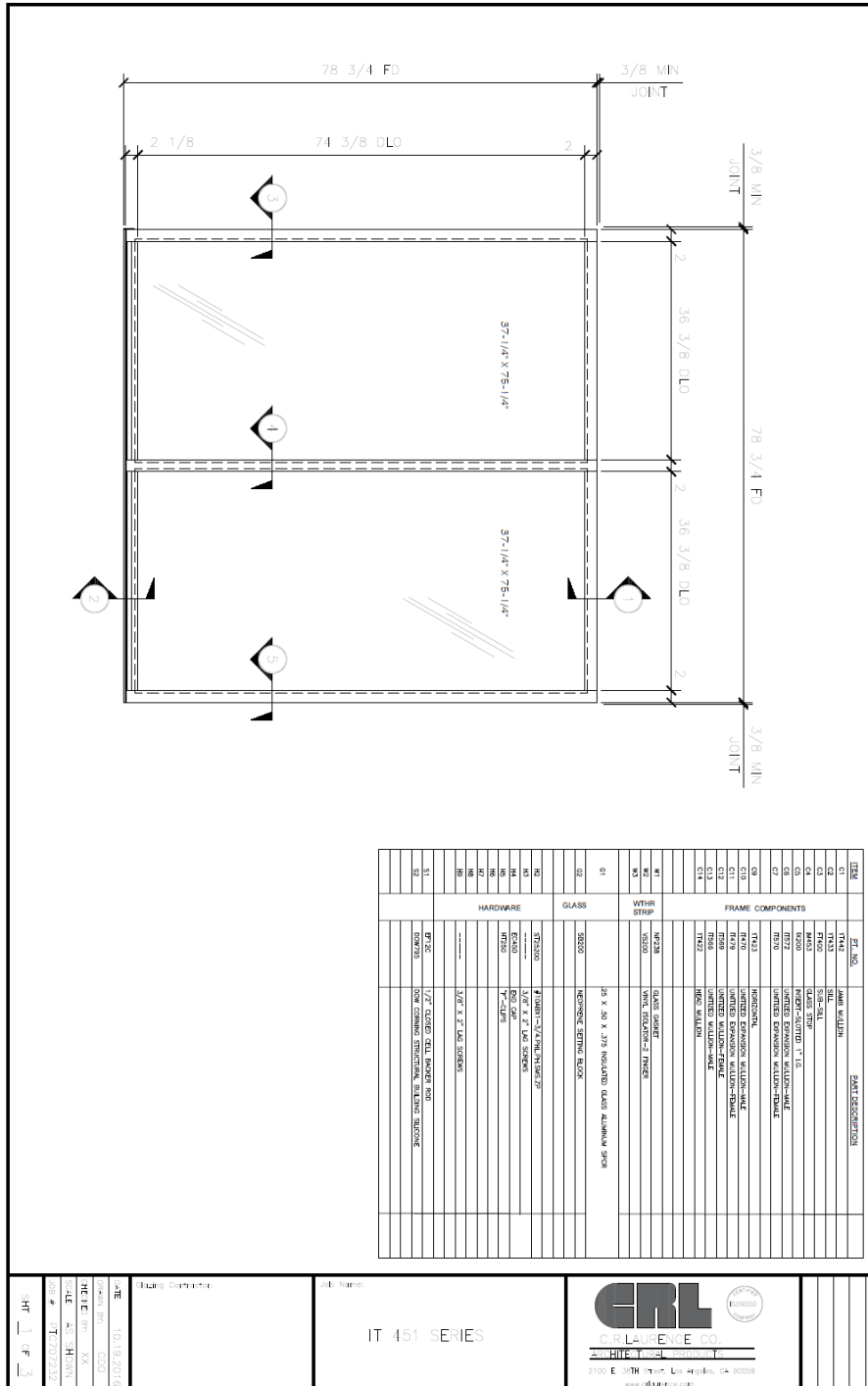


TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

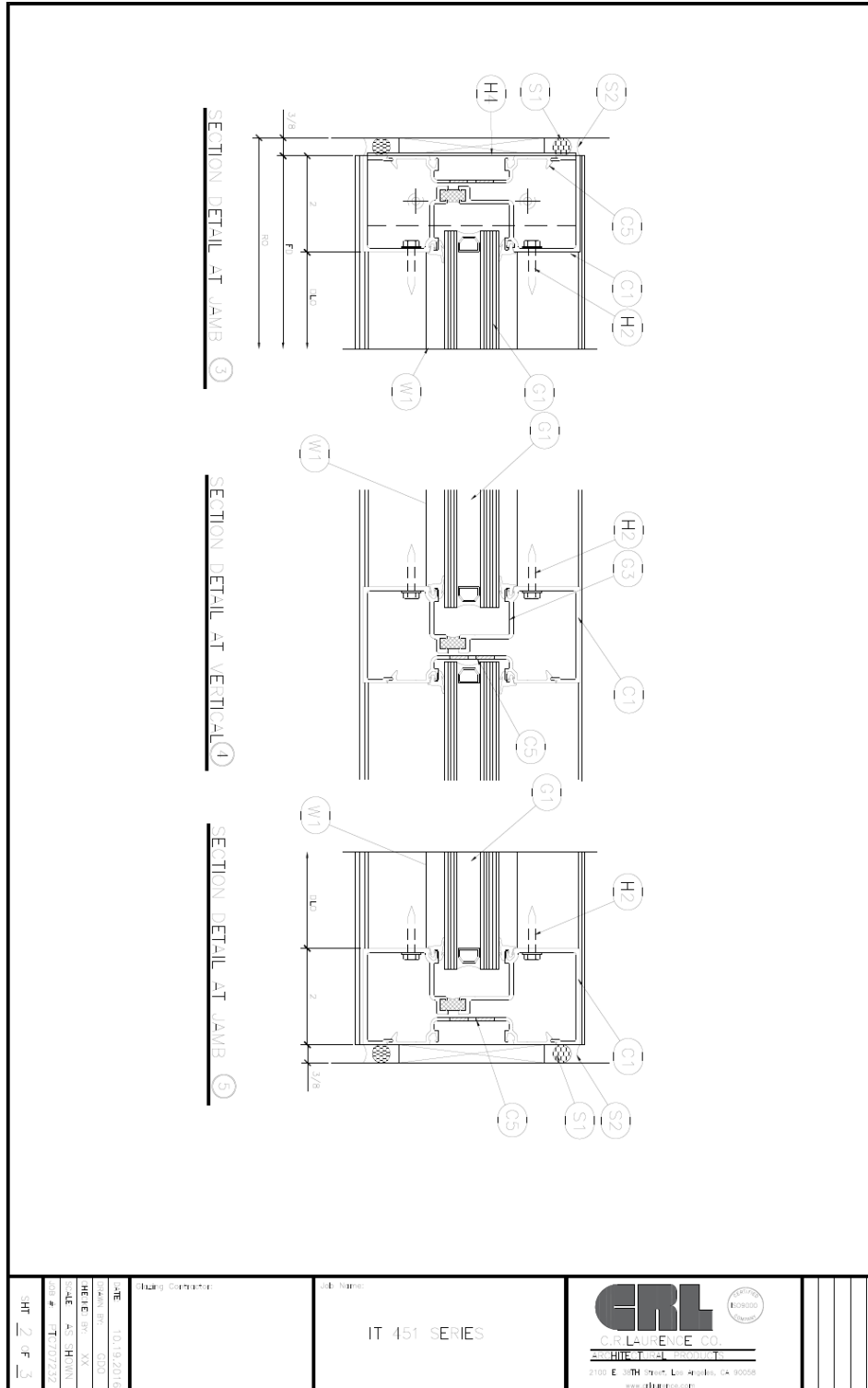
SECTION 12 DRAWINGS



TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

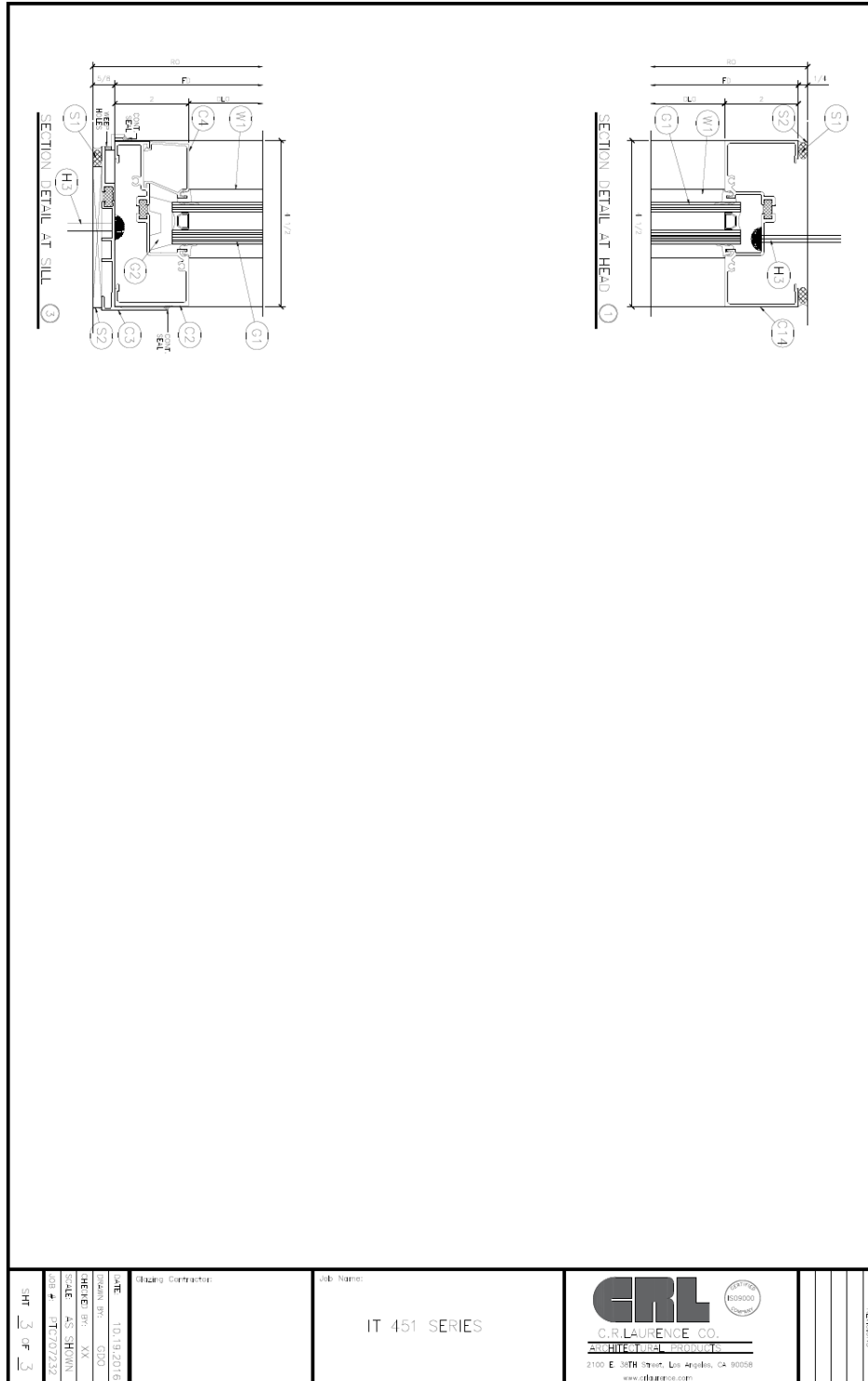
Date: 11/17/17



TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17



TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

SECTION 13

PHOTOGRAPHS



Receive Room View of Test Specimen



Source Room View of Test Specimen



Total Quality. Assured.

25800 Commercentre Drive
Lake Forest, California 92630

Telephone: 949-460-9600
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR CR LAURENCE CO, INC.

Report No.: H7645.01-303-11 R0

Date: 11/17/17

SECTION 14

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	11/17/17	N/A	Original Report Issue