

VALUE WINDOWS & DOORS

ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM E90 SOUND TRANSMISSION LOSS TESTING ON A SERIES 7400, TILT/TURN WINDOW

REPORT NUMBER

I5512.02-303-11 R0

TEST DATE

06/13/18

ISSUE DATE

06/29/18

RECORD RETENTION END DATE

06/14/22

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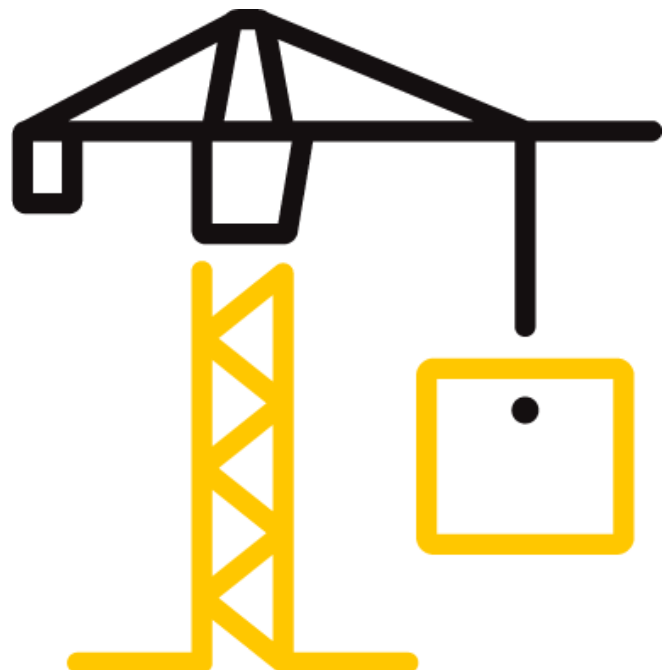
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TEST REPORT FOR VALUE WINDOWS & DOORS

Report No.: I5512.02-303-11 R0

Date: 06/29/18

REPORT ISSUED TO

VALUE WINDOWS & DOORS

1830 Flower Avenue

Durarte, California 91010

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Value Windows & Doors 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	7400
TYPE	Tilt/Turn Window
GLAZING (Nominal Dimensions)	1-1/4" IG (1/4" Laminate Exterior, 3/4" Air Space, 1/4" Annealed Interior) Glass Temperature at 75°F
DATA FILE NO.	I5512.01B
STC	37
OITC	30

For INTERTEK B&C:

COMPLETED BY: Ryan R. Lau

TITLE: Technician II

SIGNATURE:

DATE: 06/29/18

REVIEWED BY: Bradley D. Hunt

TITLE: Laboratory Manager

SIGNATURE:

DATE: 06/29/18

RRL:bdh:ab

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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*

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.

EQUIPMENT

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

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INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Card	National Instruments	PXIe-4464	Data Acquisition Card	INT00627	10/17
Data Acquisition Card	National Instruments	PXIe-4464	Data Acquisition Card	INT00395	10/17
Data Acquisition Card	National Instruments	PXIe-4464	Data Acquisition Card	INT00396	10/17
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00239	04/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00240	04/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00241	04/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00242	04/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00243	04/18
Receive Room Microphone	PBC Piezotronics	378C20	Microphone and Preamplifier	INT00244	04/18
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00245	04/18
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00246	04/18
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00247	04/18
Receive Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	INT00228	04/18
Receive Room Environmental Indicator	Comet	T7510	Environmental Indicator	INT00299	04/18
Source Room Environmental Indicator	Comet	T7510	Environmental Indicator	INT00300	04/18
Microphone Calibrator	Norsonic	1251	Pistonphone Calibrator	INT00288	06/17

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

SECTION 5

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Fernando Raja	Eurotek
Francisco Salgado	Eurotek
Ryan R. Lau	Intertek B&C
David A. Pendleton	Intertek B&C

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SECTION 6

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 levels were made simultaneously in the receive and source rooms at each of five microphone positions.

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 7

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.

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SECTION 8

SPECIMEN DESCRIPTION

	FRAME	ACTIVE
SIZE	47-1/4" by 59"	44" by 55-3/4"
THICKNESS	2-3/4"	2-3/4"
CORNERS	Mitered	Mitered
FASTENERS	Welds	Welds
SEAL METHOD	N/A	N/A
MATERIAL	Vinyl	Vinyl
REINFORCEMENT	N/A	N/A
THERMAL BREAK MATERIAL	N/A	N/A
DAYLIGHT OPENING SIZE	N/A	37-5/8" by 49-7/16"

MEASURED OVERALL INSULATION GLASS UNIT THICKNESS	1.217"
SPACER TYPE	Super Spacer

	EXTERIOR SHEET	GAP	INTERIOR SHEET
MEASURED THICKNESS	0.110", 0.031", 0.111"	0.742"	0.223"
MATERIAL	Laminate	Air*	Annealed
LAMINATE MATERIAL	PVB	N/A	N/A

GLAZING METHOD	Interior
GLAZING MATERIAL	Rubber Gasket
GLAZING BEAD MATERIAL	Vinyl

	TYPE	QUANTITY	LOCATION
WEATHERSTRIP	Rubber gasket	1	Perimeter of frame
	Rubber leaf gasket	1	Perimeter of sash
HARDWARE	Multipoint lock	1	Sash stile
	Keeper	7	Head (2), Sill (3), Jamb opposite of lock (2)
	Hinges	2	Jamb and sash
DRAINAGE	Weep slots w/ cap (1" by 1/4")	2	Sill

TOTAL WEIGHT (lbs)	AVERAGE WEIGHT (lbs / ft ²)
144	7.44

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

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SECTION 9

TEST RESULTS

ASTM E90 AIRBORNE SOUND TRANSMISSION LOSS



TEST DATE	06/13/18				
DATA FILE NO.	I5512.01B				
CLIENT	Value Windows & Doors				
DESCRIPTION	Series/Model: 7400 Tilt/Turn Window with 1-1/4" IG (1/4" Annealed Interior, 3/4" Air Space, 1/4" Laminate Exterior) Glass Temperature at 75°F				
SPECIMEN AREA	1.80 m ²	RECEIVE TEMP.	20.5 °C	SOURCE TEMP	20.0 °C
TECHNICIAN	RRL	RECEIVE HUMIDITY	55%	SOURCE HUMIDIT	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	36.2	4.6	101	71	26	1.53	-
100	35.0	4.5	102	74	25	1.34	-
125	41.7	5.1	105	77	24	1.10	0
160	45.1	5.3	105	82	18	0.96	6
200	37.2	6.1	104	74	25	0.68	2
250	25.3	6.7	103	69	29	0.56	1
315	20.6	6.7	104	68	30	0.47	3
400	23.2	6.0	104	66	32	0.66	4
500	18.1	5.4	104	62	37	0.20	0
630	19.3	5.8	104	61	38	0.21	0
800	20.2	5.9	104	60	38	0.31	1
1000	10.4	5.9	104	59	40	0.31	0
1250	10.3	6.1	102	56	41	0.21	0
1600	9.2	6.6	101	55	41	0.15	0
2000	6.9	7.6	103	60	37	0.23	4
2500	5.4	8.4	103	59	37	0.15	4
3150	4.7	9.5	102	54	41	0.21	0
4000	4.8	11.4	102	49	45	0.36	0
5000	5.2	14.3	101	45	46	0.33	-
STC RATING	37 (Sound Transmission Class)						
DEFICIENCIES	25 (Sum of Deficiencies)						
OITC RATING	30 (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

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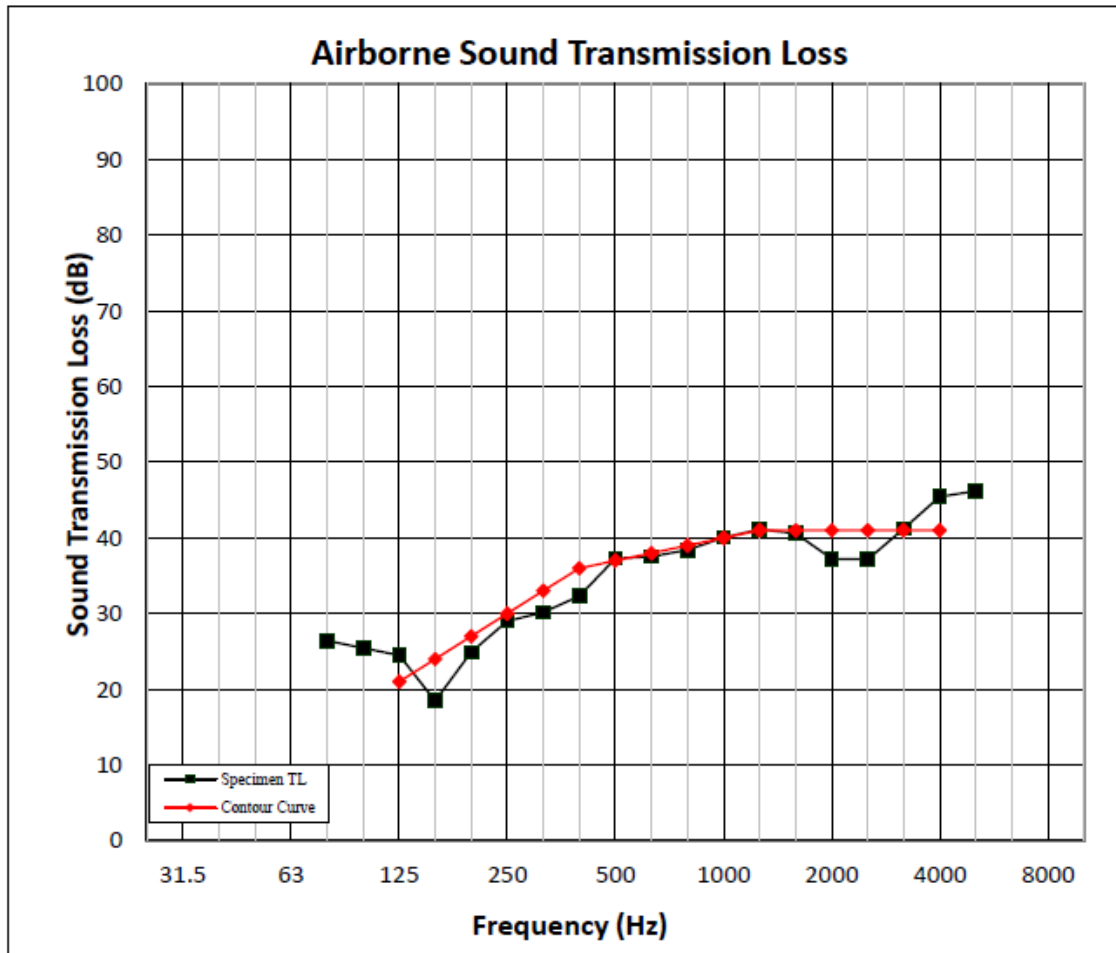
SECTION 10

RESULTS GRAPH

ASTM E90 AIRBORNE SOUND TRANSMISSION LOSS



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SPECIMEN AREA	1.80 m ²	RECEIVE TEMP.	20.5 °C	SOURCE TEMP	20.0 °C
TECHNICIAN	RRL	RECEIVE HUMIDITY	55%	SOURCE HUMIDIT	52%



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SECTION 11

PHOTOGRAPHS



Photo No. 1
Source Room View of Test Specimen



Photo No. 2
Receive 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

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SECTION 12

REVISION LOG

REVISION #	DATE	PAGES	REVISION
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