1512 S BATAVIA AVENUE
GENEVA, IL 60134
630-232-0104

An ALION Technical Center

Test Report

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FOUNDED 1918 BY
WALLACE CLEMENT SABINE

FOR: **C.R. Laurence Co., Inc.**
Los Angeles, CA

Sound Transmission Loss
RAL-TL11-267

CONDUCTED: 21 December 2011 *(Report Revised 2016-05-27)*

ON: Glass 2 - 45X ArcticFront Storefront – Glazing 1" Clear IG (¼" Laminated – ½" Aluminum Spacer - ¼" Laminated) – ¼" Laminated is 1/8" Clear Annealed – 0.030 PVB - 1/8" Clear Annealed

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-09 and E413-10, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure (NVLAP Lab Code: 100227-0). A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as Glass 2 - 45X ArcticFront Storefront – Glazing 1" Clear IG (¼" Laminated – ½" Aluminum Spacer - ¼" Laminated) – ¼" Laminated is 1/8" Clear Annealed – 0.030 PVB - 1/8" Clear Annealed. The overall dimensions of the specimen as measured were nominally 1.21 m (47.5 in.) wide by 2.43 m (95.5 in.) high and 121 mm (4.75 in.) deep. The specimen consisted of an aluminum framed glass unit inside a wood buck. The overall dimensions of the aluminum framed glass unit were nominally 1.12 m (44 in.) wide by 2.34 m (92 in.) high and 184 mm (4.75 in.) thick. The aluminum face width measured 51 mm (2 in.) wide. The daylight opening of the glass as measured was 1 m (40 in.) wide by 2.23 m (88 in.) high. The glazing consisted of nominally 7.1 mm (9/32 in.) thick glass, 14.3 mm (9/16 in.) thick airspace and 7.1 mm (9/32 in.) thick glass. The specimen was placed directly in the laboratory's 1.22 m (4 ft) by 2.44 m (8 ft) test opening and was sealed on the periphery (both sides) with dense mastic.

A manufacturer's drawing accompanied the specimen. Components as provided by the drawing were as follows: Extrusions - FG-3506 Vertical/Jamb 92"; FG-3506 Head 40"; FG-3510 Sill 40"; FG-3144 Glass Stop 39-15/16". Accessories – FG-3220 Setting Block; FS-8 #14 x 1" Spline Screw; FG-1133 Horizontal Gasket 41-¼"; FG-1133 Vertical Gasket 90-¼". The manufacturer's detailed drawing is maintained on file. A visual inspection verified the manufacturer's description of the specimen.

The weight of the specimen as measured was 112.5 kg (248 lbs.), an average of 43.1 kg/m^2 (8.8 lbs/ft^2). The transmission area used in the calculations was 2.6 m^2 (28 ft^2). The source and receiving room temperatures at the time of the test were 21ºC (71±1ºF) and 53±3% relative humidity. The source and receive reverberation room volumes were 178 m^3 (6,298 ft^3) and 132 m^3 (4,660 ft^3), respectively.

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TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the transmission loss test data is within the limits set by the ASTM Standard E90-09.

FREQ.	T.L.	C.L.	DEF.	FREQ.	T.L.	C.L.	DEF.
100	27	0.82		800	43	0.17	
125	25	0.53		1000	43	0.14	
160	25	0.49		1250	42	0.17	
200	19	0.59	8	1600	39	0.18	2
250	27	0.71	3	2000	37	0.13	4
315	28	0.47	5	2500	40	0.11	1
400	34	0.46	2	3150	46	0.06	
500	36	0.22	1	4000	49	0.08	
630	40	0.26		5000	52	0.07	

STC=37

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)
T.L. = TRANSMISSION LOSS, dB
C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 26)
STC = SOUND TRANSMISSION CLASS

Tested by _____
Marc Sciaky
Experimentalist

Approved by _____
Eric Wolfram
Laboratory Manager

Digitally signed by Eric Wolfram
DN: cn=Eric Wolfram, o=Alion Science and Technology, ou=Riverbank Acoustical Laboratories, email=ewolfram@alionscience.com, c=US
Date: 2016.05.27 11:54:22 -05'00'

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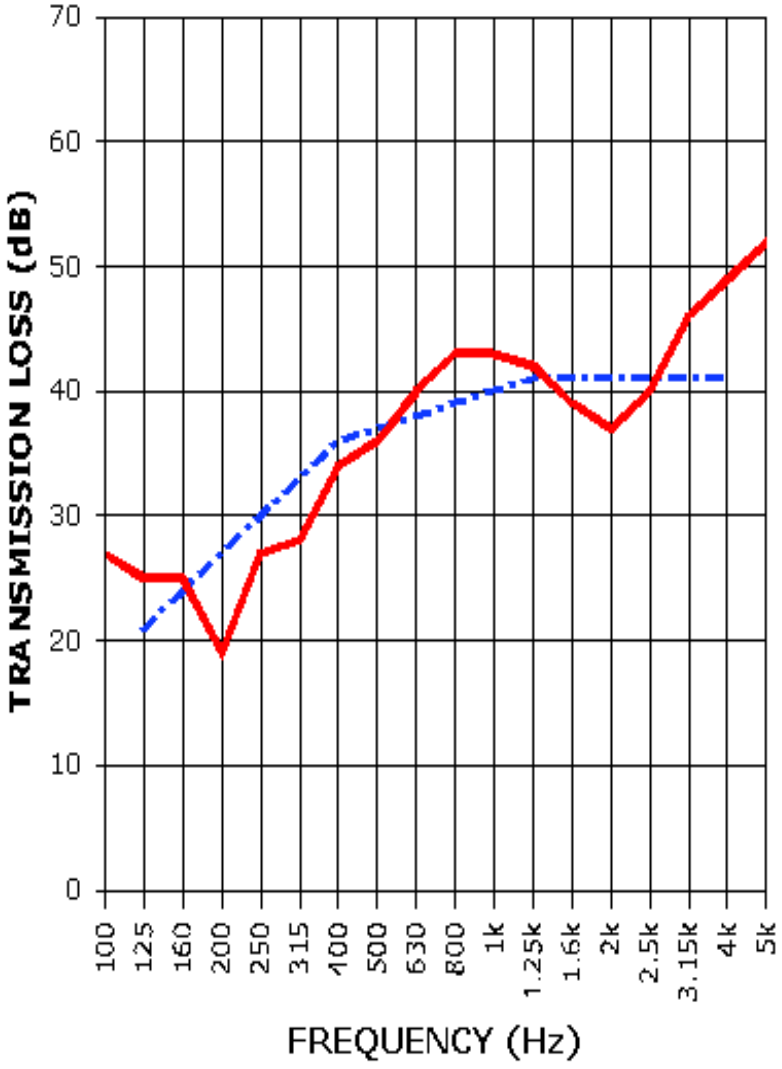
SOUND TRANSMISSION REPORT

Glass 2 - 45X ArcticFront Storefront – Glazing 1" Clear IG (¼" Laminated – ½" Aluminum Spacer - ¼" Laminated) – ¼" Laminated is 1/8" Clear Annealed – 0.030 PVB - 1/8" Clear Annealed



STC=37

OITC=29

TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR

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APPENDIX A: OITC Determination (Outdoor Indoor Transmission Class)

Specimen: Glass 2 - 45X ArcticFront Storefront – Glazing 1" Clear IG (¼" Laminated – ½" Aluminum Spacer - ¼" Laminated) – ¼" Laminated is 1/8" Clear Annealed – 0.030 PVB - 1/8" Clear Annealed (See Full Report)

The determination of the Outdoor Indoor Transmission Class (OITC) as reported below was made with explicit conformity to the procedures described in the ASTM E1332-10a test standard. Test Method ASTM E90-09 was used to obtain the sound transmission loss data. This rating is based on an average transportation noise source spectrum and an A-weighted sound level reduction, either of which may be inappropriate for some applications.

One-third Octave Band Center Frequency, Hz	Reference Sound Spectrum, dB	Test Specimen Transmission Loss, dB
80	103	19
100	102	27
125	101	25
160	98	25
200	97	19
250	95	27
315	94	28
400	93	34
500	93	36
630	91	40
800	90	43
1000	89	43
1250	89	42
1600	88	39
2000	88	37
2500	87	40
3150	85	46
4000	84	49

*OITC=**29***