

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

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FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Test Report

SPONSOR: **Auralex Acoustics, Inc.**
Indianapolis, IN

Sound Transmission Loss
RAL™-TL20-215

CONDUCTED: 2020-08-05

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ON: Auralex Sheet Blok (4 ft x 8 ft mass loaded vinyl sheet)

TEST METHODOLOGY

Riverbank Acoustical Laboratories™ is accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) as an ISO 17025:2017 Laboratory (NVLAP Lab Code: 100227-0) and for this test procedure. The test reported in this document conformed explicitly with ASTM E90-09 (2016): "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements." The single number rating of the specimen was calculated according to ASTM E413-16: "Classification for Rating Sound Insulation." A description of the measurement procedure and room specifications is available upon request. The transmission loss values are for a single direction of measurement. The results presented in this report apply to the sample as received from the test sponsor.

INFORMATION PROVIDED BY SPONSOR

The test specimen was designated by the sponsor as Auralex Sheet Blok (4 ft x 8 ft mass loaded vinyl sheet). The following nominal product information was provided by the sponsor prior to testing. The accuracy of such sponsor-provided information can affect the validity of the test results.

Product Under Test

Trade Name: Auralex Sheet Blok
Material: Mass loaded vinyl
Manufacturer: Auralex Acoustics, Inc.

SPECIMEN MEASUREMENTS & TEST CONDITIONS

Through a full external visual inspection performed on the test specimen, Riverbank personnel verified the following specimen properties:

Test Specimen

Material: Flexible vinyl sheet
Dimensions: 1219.2 mm (48 in.) x 2438.4 mm (96 in.)
Thickness: 3.15 mm (0.124 in.)
Overall Weight: 14.63 kg (32.25 lbs)

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Overall Specimen Measurements

Dimensions: 1.22 m (48.0 in) wide by 2.44 m (96.0 in) high
Thickness: 3.15 mm (0.124 in.)
Weight: 14.63 kg (32.25 lbs)
Transmission Area: 2.973 m² (32 ft²)
Mass per Unit Area: 4.92 kg/m² (1.01 lbs/ft²)

Test Aperture

Size: 1.22 m (4.0 ft.) by 2.44 m (8.0 ft.)
Filler Wall: None
Sealed: Entire periphery (both sides) with dense mastic

Test Environment

Source Room

Volume: 178.33 m³
Temperature: 21.7 °C ± 0.0 °C
Relative Humidity: 54.0 % ± 0.0 %

Receive Room

Volume: 130.24 m³
Temperature: 22.2 °C ± 0.0 °C
Relative Humidity: 53.5 % ± 1.0 %

Requirements

Temperature: 22° C +/- 2° C, not more than 3° C change over all tests.
Relative Humidity: ≥ 30%, not more than +/- 3% change over all tests.

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Figure 1 – Specimen mounted in test opening, as viewed from source room (left) and receive room (right)

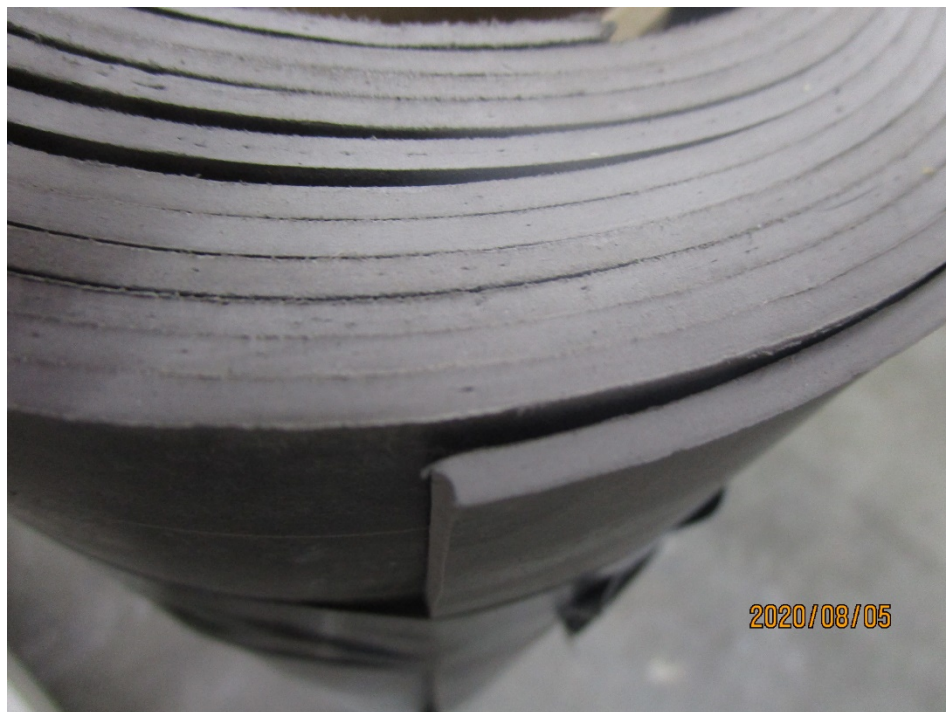


Figure 2 – Detail of specimen material

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TEST RESULTS


Sound transmission loss values are tabulated at the eighteen standard frequency bands. 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 (2016). See Appendix A for identification of corrections applied to the reported data.


<u>FREQ.</u>	<u>TL</u>	<u>ΔTL</u>	<u>DEF.</u>	<u>FREQ.</u>	<u>TL</u>	<u>ΔTL</u>	<u>DEF.</u>
100	15	0.47	0	800	25	0.19	3
125	15	0.52	0	1000	26	0.09	3
160	16	0.82	0	1250	28	0.13	2
200	16	0.37	0	1600	30	0.14	0
250	17	0.42	2	2000	31	0.14	0
315	19	0.23	3	2500	33	0.16	0
400	20	0.26	5	3150	34	0.14	0
500	21	0.10	5	4000	36	0.11	0
630	23	0.23	4	5000	38	0.16	0

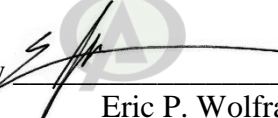
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ABBREVIATION INDEX

- FREQ. = 1/3 OCTAVE BAND CENTER FREQUENCY, Hz
- TL = TRANSMISSION LOSS, dB
- ΔTL = 95% CONFIDENCE INTERVAL FOR TL MEASUREMENTS, dB
- DEF. = DEFICIENCIES, dB BELOW SHIFTED STC CONTOUR (SUM OF DEF = 27)
- STC = SOUND TRANSMISSION CLASS

Tested by 
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Report by 
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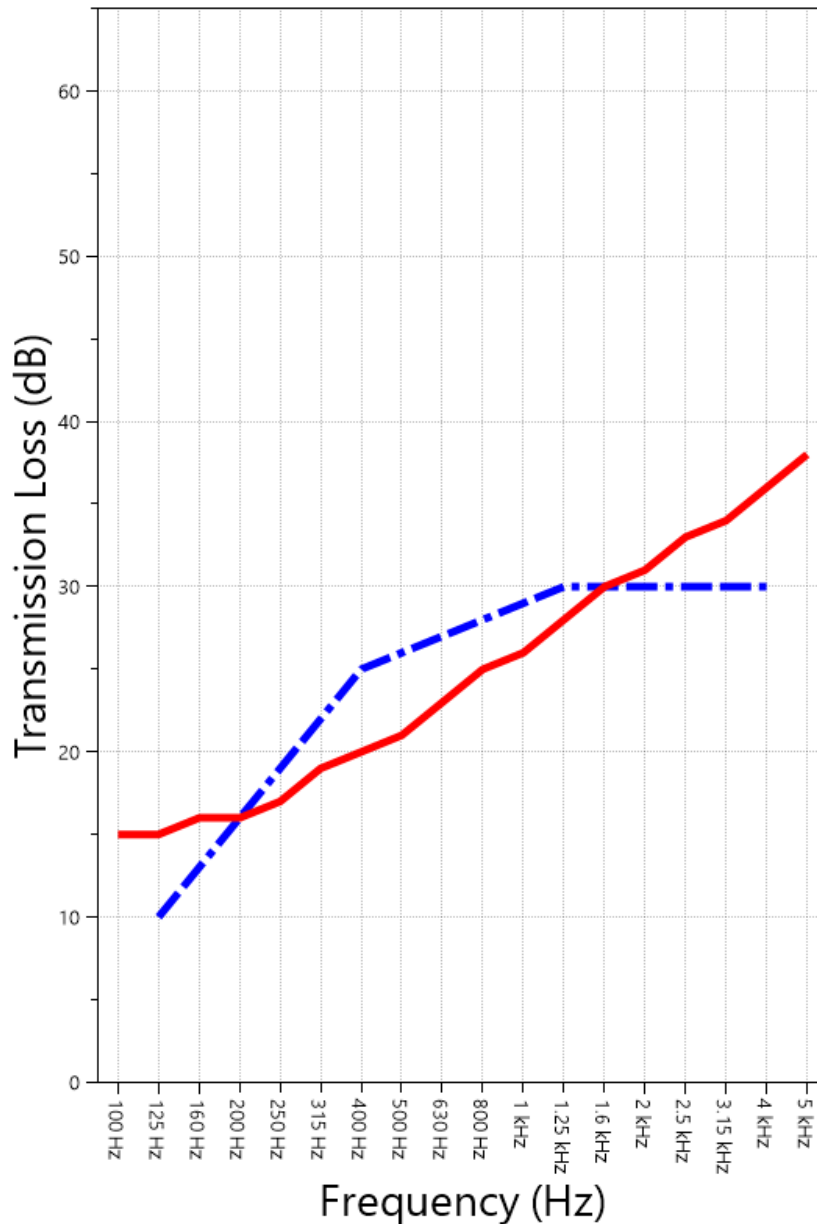
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SOUND TRANSMISSION REPORT

Auralex Sheet Blok (4 ft x 8 ft mass loaded vinyl sheet)



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TRANSMISSION LOSS
SOUND TRANSMISSION CLASS CONTOUR



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APPENDIX A: Extended Frequency Range Data

Specimen: Auralex Sheet Blok (4 ft x 8 ft mass loaded vinyl sheet) (See Full Report)

The following non-accredited data were obtained in accordance with ASTM E90-09 (2016), but extend beyond the defined frequency range of 100Hz to 5,000Hz. These unofficial results are representative of the RAL test environment only and intended for research & comparison purposes. Sampling precision observed during this procedure is reported below. Corrections are detailed in Appendix B.

1/3 Octave Band Center Frequency (Hz)	Sound Transmission Loss (dB)	Applicable Corrections	Δ TL (Eq. A2.5) (dB)	Repeatability (dB)
31.5	11		0.81	1.24
40	12		0.86	1.44
50	8		1.22	0.98
63	5		1.29	2.33
80	7		1.09	1.46
100	15		0.47	0.77
125	15		0.52	1.28
160	16		0.82	1.18
200	16		0.37	0.74
250	17		0.42	0.53
315	19		0.23	0.46
400	20		0.26	0.41
500	21		0.10	0.41
630	23		0.23	0.32
800	25		0.19	0.30
1000	26		0.09	0.29
1250	28		0.13	0.15
1600	30		0.14	0.18
2000	31		0.14	0.12
2500	33		0.16	0.28
3150	34		0.14	0.23
4000	36		0.11	0.18
5000	38		0.16	0.26
6300	40		0.17	0.28
8000	42		0.20	0.67
10000	43		0.24	0.93
12500	41	A	0.29	1.93

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APPENDIX B: Glossary of Standardized Corrections and Adjustments

Specimen: Auralex Sheet Blok (4 ft x 8 ft mass loaded vinyl sheet) (See Full Report)

Mark Interpretation

- A** Measured sound pressure levels in the receive room are within 10 dB of the ambient noise level at the marked frequency band. Receive room levels used to calculate Transmission Loss are corrected according to ASTM E90 Section 10.3.
- AA** Measured sound pressure levels in the receive room are within 5 dB of the ambient noise level at the marked frequency band. Receive room levels used to calculate Transmission Loss are corrected according to ASTM E90 Section 10.3.1. Transmission Loss values calculated from levels corrected this way will be less than or equal to Transmission Loss values from a hypothetical test using the same specimen and a receive room with idealized ambient sound levels of $(-\infty)$ dB.
- F** The reported Transmission Loss is within 10 dB of the laboratory flanking limit at the marked frequency band. The measured performance of the specimen may be limited by the performance of the laboratory building structure at this frequency band.
- Z** The reported Transmission Loss at the marked frequency band has been corrected according to ASTM E90 Section A3.2.7 to account for possible sound transmission through the filler assembly.
- ZZ** The reported Transmission Loss at the marked frequency band has been corrected according to ASTM E90 Section A3.2.8 to account for possible sound transmission through the filler assembly. Transmission Loss values corrected this way will be less than or equal to Transmission Loss values from a hypothetical test using the same specimen and an idealized filler assembly with a Sound Transmission Class rating of (∞) .

APPENDIX C: Glossary of Variability Metrics

Specimen: Auralex Sheet Blok (4 ft x 8 ft mass loaded vinyl sheet) (See Full Report)

Δ TL, the 95% confidence interval for reported transmission loss values, is calculated from the standard deviation of the sets of measurements for source room sound pressure level, receive room sound pressure level, and receive room sound absorption. This metric is calculated in an effort to quantify the combined influences of room geometry, microphone positioning, and other varying environmental conditions on reported results.

Repeatability, expressed as a 95% confidence interval, is calculated from the standard deviation of transmission loss as obtained from a set of six (6) consecutive tests conducted according to this test method by RAL on 2020-02-24. The tests were performed on a specimen composed of welded aluminum tubing, using the same test opening as used in this report. This metric provides an estimate of the variation in results that might be observed if the test were repeated with no change to the installed specimen. Note that repeatability will vary with the construction type.

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APPENDIX D: Instruments of Traceability

Specimen: Auralex Sheet Blok (4 ft x 8 ft mass loaded vinyl sheet) (See Full Report)

<u>Description</u>	<u>Model</u>	<u>Serial Number</u>	<u>Date of Certification</u>	<u>Calibration Due</u>
System 2	Type 3160-A-042	3160-106974	2019-08-08	2020-08-08
Bruel & Kjaer Mic And Preamp D	Type 4943-B-001	2311440	2020-09-27	2021-09-27
Bruel & Kjaer Pistonphone	Type 4228	2781248	2019-08-09	2020-08-09
EXTECH Hygro 663	SD700	A083663	2019-12-04	2020-12-04
EXTECH Hygro 330	SD700	A083330	2019-09-10	2020-09-10

APPENDIX E: Revisions to Original Test Report

Specimen: Auralex Sheet Blok (4 ft x 8 ft mass loaded vinyl sheet) (See Full Report)

<u>Date</u>	<u>Revision</u>
2020-08-13	Original report issued

END