

Test Report

FOR: **dB Noise Reduction**
Cambridge, Ontario.

Sound Transmission Loss
RAL™-TL15-132a

CONDUCTED: 2015-04-15

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ON: dBNR Nois-eNvelope™ Panel A4 (Perforations Face Source)

TEST METHOD

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 17025:2005 Laboratory (NVLAP Lab Code: 100227-0) and for this test procedure. The test reported in this document conformed explicitly with ASTM E90-09: "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 E413-10: "Classification for Rating Sound Insulation." A description of the measuring procedure and room qualifications is available upon request.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as dBNR Nois-eNvelope™ Panel A4 (Perforations Face Source). A full internal inspection performed on the test specimen by Riverbank personnel verified the manufacturer's description.

Frame

Overall Size: 1.17 m (46.0 in.) x 2.43 m (95.50 in.)
Overall Thickness: 101.60 mm (4.0 in.)
Material: Galvannealed steel*
Material Thickness 1.21 mm (0.048 in.), 18 gauge

Face Panel (Source Side)

Thickness: 0.86 mm (0.034 in.), 22 gauge
Material: Galvannealed steel*
Perforations: 2.32 mm (0.09 in.) diameter
60° staggered pitch, 4.45 mm (0.175 in.) on center
24.6% open area in perforated region
Fastened: Tongue and groove interlocking joints, soldered to frame
approximately 101.60 mm (4.0 in.) on center

Rear Panel (Receive Side)

Thickness: 1.19 mm (0.047 in.)
Material: Galvannealed steel*
Fastened: Tongue and groove interlocking joints, soldered to frame
approximately 152.40 mm (6.0 in.) on center



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Core

Thickness: 101.60 mm (4.0 in.)
Material: Approximately 101.60 mm (4.0 in.) mineral wool, 4.0 lbs./ft³*

* = Information provided by manufacturer and not verified by RAL.

Physical Measures

Size: 1.17 m (46.00 in.) wide by 2.43 m (95.50 in.) high
Thickness: 101.60 mm (4.00 in.)
Weight: 69.17 kg (152.50 lbs.)
Mass per Unit Area: 24.41 kg/m² (5.00 lbs./ft²)
Transmission Area: 2.83 m² (30.50 ft²)

Test Aperture

Size: 1.22 m (4.0 ft.) by 2.44 m (8.0 ft.)
Filler Wall: N/A
Sealed: Entire periphery (both sides) with dense mastic

Test Environment

Source Room

Volume: 178.3 m³ (6297.6 ft³)
Temperature: 23±0°C (74±1°F)
Humidity: 53±0%

Receive Room

Volume: 139.4 m³ (4923.6 ft³)
Temperature: 23±0°C (74±0°F)
Humidity: 54±1



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**PHOTOGRAPH WITHHELD BY
DB NOISE REDUCTION
CONTAINS PROPRIETARY
INFORMATION**

Figure 1 – Specimen mounted in the test opening.

**PHOTOGRAPH WITHHELD BY
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Figure 2 – Detail of the test specimen.



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**PHOTOGRAPH WITHHELD BY DB NOISE REDUCTION
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Figure 3 – Detail of the insulated core.

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TEST RESULTS

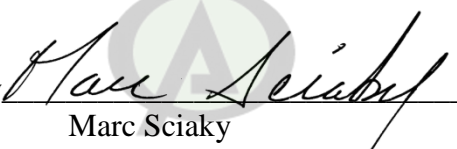
Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the transmission loss test data is within the limits set by the ASTM Standard E90-09.

<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>	<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>
100	23	0.60		800	48	0.17	
125	20	0.81	3	1000	53	0.17	
160	21	0.38	5	1250	56	0.19	
200	23	0.62	6	1600	56	0.14	
250	26	0.35	6	2000	56	0.07	
315	31	0.29	4	2500	59	0.10	
400	35	0.30	3	3150	61	0.08	
500	41	0.28		4000	62	0.08	
630	45	0.26		5000	64	0.09	

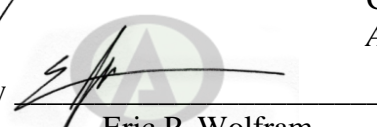
STC=39

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 = 27)
- STC = SOUND TRANSMISSION CLASS

Tested by 
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Acoustician

Approved by 
Eric P. Wolfram
Laboratory Manager



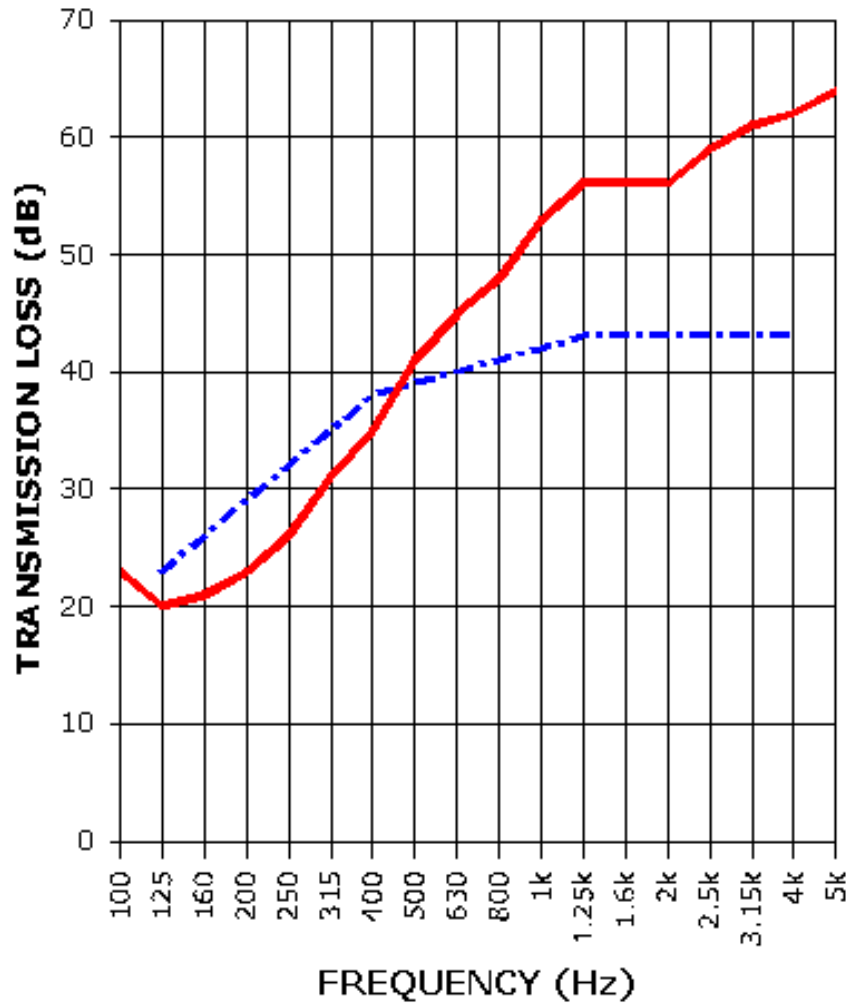
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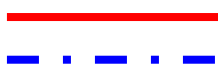
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SOUND TRANSMISSION REPORT
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TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR



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APPENDIX A: Extended Frequency Range Data

Specimen: dBNR Nois-eNvelope™ Panel A4 (Perforations Face Source) (See Full Report)

The following non-accredited data were obtained in accordance with ASTM E90-09, 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.

1/3 Octave Band Center Frequency (Hz)	Sound Transmission Loss (dB)	Uncertainty (95% ±)
31.5	18	1.31
40	20	0.90
50	14	0.85
63	11	0.86
80	16	0.92
100	23	0.60
125	20	0.81
160	21	0.38
200	23	0.62
250	26	0.35
315	31	0.29
400	35	0.30
500	41	0.28
630	45	0.26
800	48	0.17
1000	53	0.17
1250	56	0.19
1600	56	0.14
2000	56	0.07
2500	59	0.10
3150	61	0.08
4000	62	0.08
5000	64	0.09
6300	64	0.06
8000	60	0.08
10000	56	0.07
12500	55	0.10



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APPENDIX B: Instruments of Traceability

Specimen: dBNR Nois-eNvelope™ Panel A4 (Perforations Face Source) (See Full Report)

<u>Description</u>	<u>Model</u>	<u>Serial Number</u>	<u>Date of Certificati on</u>	<u>Calibration Due</u>
Bruel & Kjaer Pulse Analyzer	Type 3560-C	2639093	2014-07-21	2015-07-21
Bruel & Kjaer Mic And Preamp	Type 4943-B-001	2311427	2014-07-21	2015-07-21
G.R.A.S Pistonphone	Type42AF-1	80001	2014-08-06	2015-08-06
Omega Digital Thermo- Hygrometer	Model # RH411	H0101841	2014-11-28	2015-11-28
Omega Digital Thermo- Hygrometer	Model # RH411	H0102210	2014-06-27	2015-06-27

END



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