

## Test Report

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

**Sound Transmission Loss**  
**RAL™-TL15-131a**

CONDUCTED: 2015-04-15

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ON: dBNR Nois-eNvelope™ Panel A6 (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 A6 (Perforations Face Source). A full internal inspection performed on the test specimen by Riverbank personnel verified the manufacturer's description.

#### Frame

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Overall Size: 1.17 m (46.0 in.) x 2.43 m (95.50 in.)  
Overall Thickness: 152.40 mm (6.0 in.)  
Material: Galvannealed steel\*  
Material Thickness 1.21 mm (0.048 in.), 18 gauge

#### Face Panel (Source Side)

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Thickness: 0.89 mm (0.035 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)

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Thickness: 1.22 mm (0.048 in.), 18 gauge  
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

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Thickness: 152.40 mm (6.0 in.)  
Material: (Source Side)  
75.18 mm (2.96 in.) mineral wool, 4.0 lbs./ft<sup>3</sup>\*  
1.19 mm (0.047 in.) galvanized steel\* septum, 18 gauge  
76.0 mm (3.0 in.) mineral wool, 4.0 lbs./ft<sup>3</sup>\*  
(Receive Side)

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

### Physical Measures

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Size: 1.17 m (46.00 in.) wide by 2.43 m (95.50 in.) high  
Thickness: 152.40 mm (6.00 in.)  
Weight: 105.92 kg (233.50 lbs.)  
Mass per Unit Area: 37.35 kg/m<sup>2</sup> (7.65 lbs./ft<sup>2</sup>)  
Transmission Area: 2.83 m<sup>2</sup> (30.50 ft<sup>2</sup>)

### Test Aperture

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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

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#### Source Room

Volume: 178.3 m<sup>3</sup> (6297.6 ft<sup>3</sup>)  
Temperature: 23±0°C (73±0°F)  
Humidity: 56±0%

#### Receive Room

Volume: 139.4 m<sup>3</sup> (4923.6 ft<sup>3</sup>)  
Temperature: 23±0°C (74±1°F)  
Humidity: 54±0



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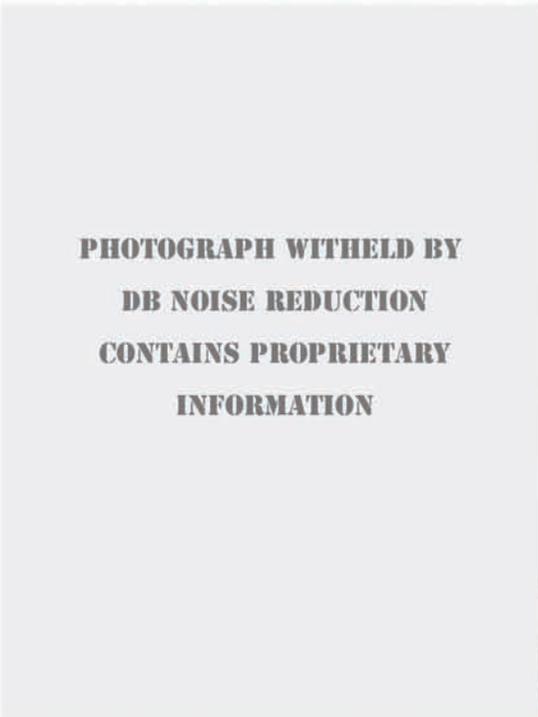
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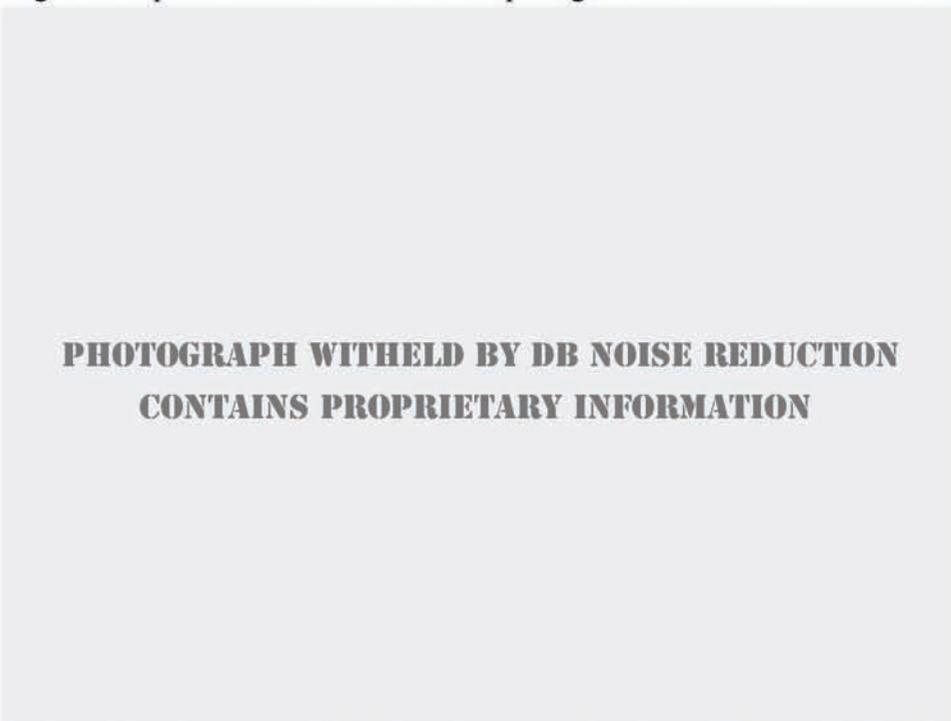
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**PHOTOGRAPH WITHELD BY  
DB NOISE REDUCTION  
CONTAINS PROPRIETARY  
INFORMATION**

Figure 1 – Specimen mounted in the test opening.



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

Figure 2 – Detail of the test specimen.



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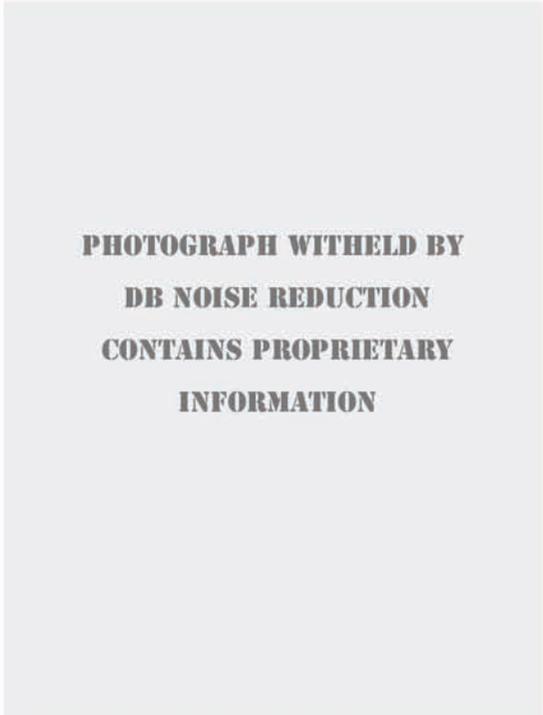


Figure 3 – Detail of the insulated core.

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### TEST RESULTS

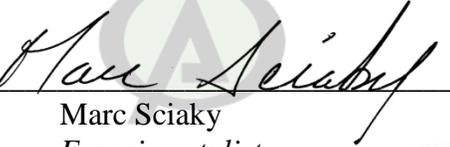
Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the transmission loss test data is within the limits set by the ASTM Standard E90-09.

<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	22	0.76		800	57	0.19	
125	24	0.90	8	1000	58	0.11	
160	29	0.90	6	1250	56	0.14	
200	34	0.66	4	1600	57	0.12	
250	41	0.41		2000	59	0.12	
315	46	0.33		2500	60	0.10	
400	51	0.37		3150	61	0.06	
500	53	0.16		4000	59	0.08	
630	55	0.15		5000	60	0.10	

STC=48

### 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 = 18)  
STC = SOUND TRANSMISSION CLASS

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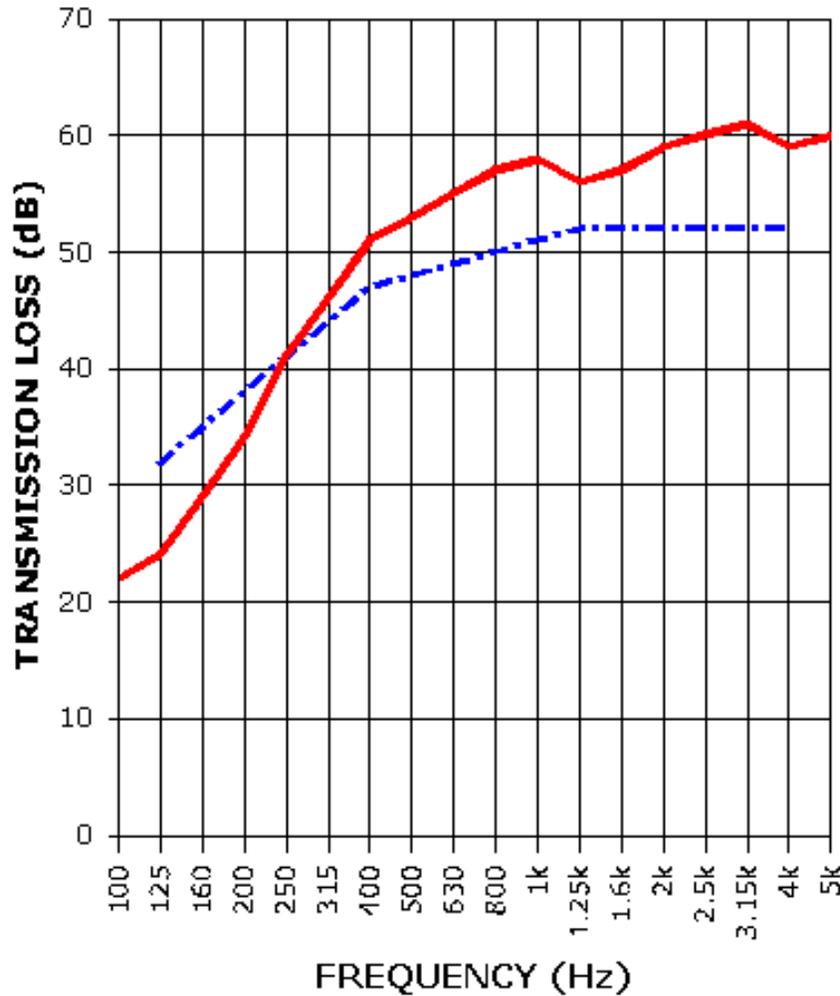
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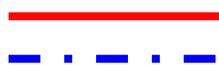
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**SOUND TRANSMISSION REPORT**  
 dBNR Nois-eNvelope™ Panel A6 (Perforations Face Source)



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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 A6 (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	20	1.18
40	23	0.98
50	15	0.82
63	12	1.65
80	14	0.72
100	22	0.76
125	24	0.90
160	29	0.90
200	34	0.66
250	41	0.41
315	46	0.33
400	51	0.37
500	53	0.16
630	55	0.15
800	57	0.19
1000	58	0.11
1250	56	0.14
1600	57	0.12
2000	59	0.12
2500	60	0.10
3150	61	0.06
4000	59	0.08
5000	60	0.10
6300	60	0.06
8000	56	0.08
10000	50	0.14
12500	49	0.18



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**APPENDIX B: Instruments of Traceability**

Specimen: dB NR Nois-eNvelope™ Panel A6 (Perforations Face Source) (See Full Report)

<u>Description</u>	<u>Model</u>	<u>Serial Number</u>	<u>Date of Certification</u> <u>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

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