

## Test Report

FOR: **AcoustiMac, LLC**  
Tampa, FL.

**Sound Transmission Loss**  
**RAL™-TL15-334**

CONDUCTED: 2015-09-14

Page 1 of 8

ON: Sound Lock (Window+Door Sound Proofing Panel) – Fabric Wrapped Panel - Wood Backing - Wood Frame

### 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 Sound Lock (Window+Door Sound Proofing Panel) – Fabric Wrapped Panel - Wood Backing - Wood Frame. A full internal inspection performed on the test specimen by Riverbank personnel verified the manufacturer's description.

#### **Frame**

---

Overall Size: 1.21 m (47.75 in.) wide by 2.43 m (95.75 in.) long  
Overall Thickness: 57.15 mm (2.25 in.)

#### **Plywood Backing**

---

Overall Size: 1.21 m (47.75 in.) wide by 2.43 m (95.75 in.) long  
Overall Thickness: 5.0 mm (0.20 in.)

*Note: The backing was stapled to the wood frame.*

#### **Insulated Core**

---

Layer 1: (source side)  
Material: Mineral wool insulation  
Thickness: 50.80 mm (2.0 in.)<sup>+</sup>  
Density: 96.11 kg/m<sup>3</sup> (6.0 lbs./ft<sup>3</sup>)

Layer 2: (receive side)  
Material: Mass-loaded vinyl  
Thickness: 2.58 m (0.10 in.)  
Density: 16.02 kg/m<sup>3</sup> (1.0 lbs./ft<sup>3</sup>)\*



NVLAP LAB CODE 100227-0

RAL IS ACCREDITED BY THE US DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM TO ISO 17025:2005 LABORATORY QUALITY MANAGEMENT AND SPECIFIC ACOUSTICAL TEST STANDARDS. THIS TEST REPORT IN NO WAY CLAIMS OR IMPLIES PRODUCT CERTIFICATION, APPROVAL OR ENDORSEMENT BY NVLAP, NIST, OR RAL.

THIS REPORT SHALL NOT BE MODIFIED OR PARTIALLY REPRODUCED WITHOUT THE WRITTEN APPROVAL OF RAL.

THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SPECIMEN.

## Test Report

AcoustiMac LLC  
2015-09-14

RAL™-TL15-334  
Page 2 of 8

### Fabric Face

---

Material: Permiabile fabric  
Thickness: 1.30 mm (0.05 in.)<sup>+</sup>

*Note: The specimen's face was wrapped in the permiabile fabric. The fabric was fastened to the frame using staples.*

### Physical Measures

---

Size: 1.21 m (47.75 in.) wide by 2.43 m (95.75 in.) high  
Thickness: 60.87 mm (2.40 in.)  
Weight: 32.66 kg (72.00 lbs.)  
Mass per Unit Area: 11.08 kg/m<sup>2</sup> (2.27 lbs./ft<sup>2</sup>)  
Transmission Area: 2.97 m<sup>2</sup> (32.00 ft<sup>2</sup>)

### 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: 178.3 m<sup>3</sup> (6297.6 ft<sup>3</sup>)  
Temperature: 22±0°C (72±0°F)  
Humidity: 58±0%

#### Receive Room

Volume: 139.6 m<sup>3</sup> (4929.5 ft<sup>3</sup>)  
Temperature: 23±0°C (73±0°F)  
Humidity: 57±1%

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

+ = Approximate measurement; measurement varied.



NVLAP LAB CODE 100227-0

RAL IS ACCREDITED BY THE US DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM TO ISO 17025:2005 LABORATORY QUALITY MANAGEMENT AND SPECIFIC ACOUSTICAL TEST STANDARDS. THIS TEST REPORT IN NO WAY CLAIMS OR IMPLIES PRODUCT CERTIFICATION, APPROVAL OR ENDORSEMENT BY NVLAP, NIST, OR RAL.

THIS REPORT SHALL NOT BE MODIFIED OR PARTIALLY REPRODUCED WITHOUT THE WRITTEN APPROVAL OF RAL.

THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SPECIMEN.

**Test Report**

**AcoustiMac LLC**  
2015-09-14

**RAL™-TL15-334**  
Page 3 of 8



Figure 1 – Specimen mounted in the test opening (source side).



Figure 2 – Specimen mounted in the test opening (receive side).



NVLAP LAB CODE 100227-0

**RAL IS ACCREDITED BY THE US DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM TO ISO 17025:2005 LABORATORY QUALITY MANAGEMENT AND SPECIFIC ACOUSTICAL TEST STANDARDS. THIS TEST REPORT IN NO WAY CLAIMS OR IMPLIES PRODUCT CERTIFICATION, APPROVAL OR ENDORSEMENT BY NVLAP, NIST, OR RAL.**

**THIS REPORT SHALL NOT BE MODIFIED OR PARTIALLY REPRODUCED WITHOUT THE WRITTEN APPROVAL OF RAL.**

**THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SPECIMEN.**

**Test Report**

**AcoustiMac LLC**  
2015-09-14

**RAL™-TL15-334**  
Page 4 of 8



Figure 3 – Detail of the test specimen.



Figure 4 – Detail of the insulated core.



NVLAP LAB CODE 100227-0

RAL IS ACCREDITED BY THE US DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM TO ISO 17025:2005 LABORATORY QUALITY MANAGEMENT AND SPECIFIC ACOUSTICAL TEST STANDARDS. THIS TEST REPORT IN NO WAY CLAIMS OR IMPLIES PRODUCT CERTIFICATION, APPROVAL OR ENDORSEMENT BY NVLAP, NIST, OR RAL.

THIS REPORT SHALL NOT BE MODIFIED OR PARTIALLY REPRODUCED WITHOUT THE WRITTEN APPROVAL OF RAL.

THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SPECIMEN.

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

An  ALION Technical Center

RIVERBANK.ALIONSCIENCE.COM

FOUNDED 1918 BY  
 WALLACE CLEMENT SABINE

**Test Report**

**AcoustiMac LLC**  
 2015-09-14

**RAL™-TL15-334**  
 Page 5 of 8

TEST RESULTS

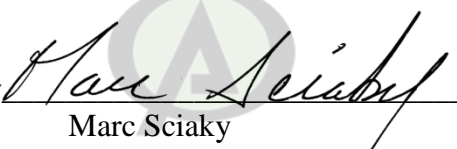
Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the transmission loss test data is within the limits set by the ASTM Standard E90-09.

<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	21	0.84		800	36	0.20	
125	19	0.80		1000	38	0.15	
160	19	0.70	2	1250	39	0.13	
200	19	0.67	5	1600	41	0.09	
250	21	0.45	6	2000	44	0.11	
315	24	0.27	6	2500	46	0.07	
400	26	0.41	7	3150	48	0.07	
500	30	0.24	4	4000	50	0.08	
630	33	0.24	2	5000	53	0.07	

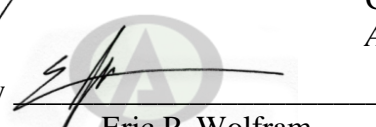
STC=34

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 = 32)
- STC = SOUND TRANSMISSION CLASS

Tested by   
 Marc Sciaky  
 Experimentalist

Report by   
 Chris Nottoli  
 Acoustician

Approved by   
 Eric P. Wolfram  
 Laboratory Manager



RAL IS ACCREDITED BY THE US DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM TO ISO 17025:2005 LABORATORY QUALITY MANAGEMENT AND SPECIFIC ACOUSTICAL TEST STANDARDS. THIS TEST REPORT IN NO WAY CLAIMS OR IMPLIES PRODUCT CERTIFICATION, APPROVAL OR ENDORSEMENT BY NVLAP, NIST, OR RAL.

THIS REPORT SHALL NOT BE MODIFIED OR PARTIALLY REPRODUCED WITHOUT THE WRITTEN APPROVAL OF RAL.  
 THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SPECIMEN.

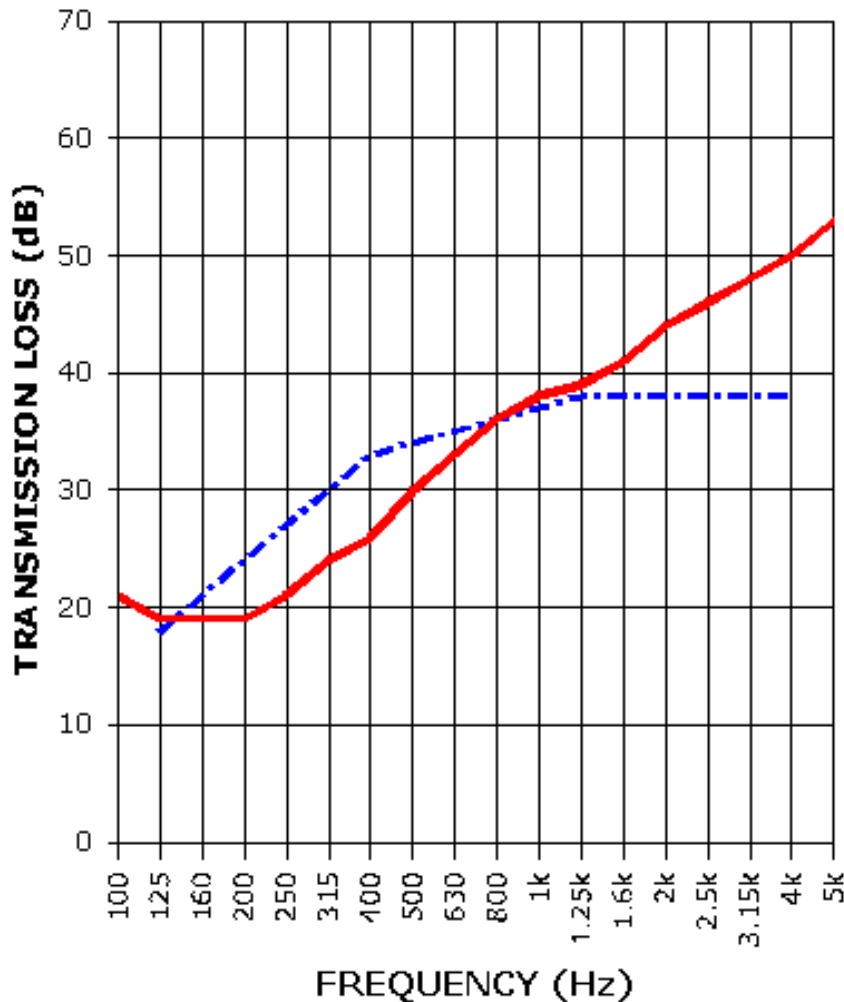
Test Report

AcustiMac LLC  
2015-09-14

RAL™-TL15-334  
Page 6 of 8

SOUND TRANSMISSION REPORT

Sound Lock (Window+Door Sound Proofing Panel) – Fabric Wrapped Panel - Wood Backing - Wood Frame



STC=34



TRANSMISSION LOSS  
SOUND TRANSMISSION LOSS CONTOUR



NVLAP LAB CODE 100227-0

RAL IS ACCREDITED BY THE US DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM TO ISO 17025:2005 LABORATORY QUALITY MANAGEMENT AND SPECIFIC ACOUSTICAL TEST STANDARDS. THIS TEST REPORT IN NO WAY CLAIMS OR IMPLIES PRODUCT CERTIFICATION, APPROVAL OR ENDORSEMENT BY NVLAP, NIST, OR RAL.

THIS REPORT SHALL NOT BE MODIFIED OR PARTIALLY REPRODUCED WITHOUT THE WRITTEN APPROVAL OF RAL.

THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SPECIMEN.

## Test Report

AcoustiMac LLC  
 2015-09-14

RAL™-TL15-334  
 Page 7 of 8

### APPENDIX A: Extended Frequency Range Data

Specimen: Sound Lock (Window+Door Sound Proofing Panel) – Fabric Wrapped Panel - Wood Backing  
 - Wood Frame (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	17	0.89
40	16	0.89
50	15	0.89
63	11	0.61
80	13	0.73
100	21	0.84
125	19	0.80
160	19	0.70
200	19	0.67
250	21	0.45
315	24	0.27
400	26	0.41
500	30	0.24
630	33	0.24
800	36	0.20
1000	38	0.15
1250	39	0.13
1600	41	0.09
2000	44	0.11
2500	46	0.07
3150	48	0.07
4000	50	0.08
5000	53	0.07
6300	56	0.06
8000	59	0.06
10000	61	0.04
12500	61	0.04



NVLAP LAB CODE 100227-0

RAL IS ACCREDITED BY THE US DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM TO ISO 17025:2005 LABORATORY QUALITY MANAGEMENT AND SPECIFIC ACOUSTICAL TEST STANDARDS. THIS TEST REPORT IN NO WAY CLAIMS OR IMPLIES PRODUCT CERTIFICATION, APPROVAL OR ENDORSEMENT BY NVLAP, NIST, OR RAL.

THIS REPORT SHALL NOT BE MODIFIED OR PARTIALLY REPRODUCED WITHOUT THE WRITTEN APPROVAL OF RAL.

THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SPECIMEN.

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

An  ALION Technical Center

RIVERBANK.ALIONSCIENCE.COM

FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## Test Report

AcoustiMac LLC  
2015-09-14

RAL™-TL15-334  
Page 8 of 8

### APPENDIX B: Instruments of Traceability

Specimen: Sound Lock (Window+Door Sound Proofing Panel) – Fabric Wrapped Panel - Wood Backing  
- Wood Frame (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	2647140	2015-04-08	2016-04-08
Bruel & Kjaer Mic And Preamp	Type 4943-B-001	2311439	2015-03-18	2016-03-18
G.R.A.S Pistonphone	Type42AF-1	80001	2015-08-14	2016-08-14
Omega Digital Thermo- Hygrometer	Model # RH411	H0101841	2014-11-28	2015-11-28
Omega Digital Thermo- Hygrometer	Model # RH411	H0103273	2015-06-30	2016-06-29

---

END



NVLAP LAB CODE 100227-0

RAL IS ACCREDITED BY THE US DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM TO ISO 17025:2005 LABORATORY QUALITY MANAGEMENT AND SPECIFIC ACOUSTICAL TEST STANDARDS. THIS TEST REPORT IN NO WAY CLAIMS OR IMPLIES PRODUCT CERTIFICATION, APPROVAL OR ENDORSEMENT BY NVLAP, NIST, OR RAL.

THIS REPORT SHALL NOT BE MODIFIED OR PARTIALLY REPRODUCED WITHOUT THE WRITTEN APPROVAL OF RAL.

THE RESULTS REPORTED APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR TESTING; RAL ASSUMES NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY OTHER SPECIMEN.