

Test Report

FOR: **Audimute**
Beachwood, OH

Impact Sound Transmission
RAL-IN17-052

CONDUCTED: 2017-11-15

Page 1 of 8

ON: LVT flooring over Peacemaker Soundproofing Underlayment over 8" Concrete Slab No Ceiling

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 E492-09: "Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine." The single number rating of the specimen was calculated according to ASTM E989-06 (2012): "Standard Classification for Determination of Impact Insulation Class (IIC)." 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 LVT flooring over Peacemaker Soundproofing Underlayment over 8" Concrete Slab No Ceiling.

The building contractor and RAL staff compiled a detailed construction specification as follows, in order of installation:

Concrete Slab

Material: Wire-reinforced concrete
Dimensions: 4 @ 609.6 mm (24 in.) x 4267.2 mm (168 in.)
Thickness: 203.2 mm (8.0 in.)
Overall Weight: 5,023.08 kg (11,074 lbs)
Area Density: 482.75 kg/m² (98.88 lb/ft²)
Joints: Underside sealed with acoustical caulk and tape
Filled with general purpose sand, sealed with ready mix compound

Underlayment

Trade Name: Peacemaker Soundproofing Underlayment
Material: Rubber granules, polymer binding agents
Overall Dimensions: 4.27 m (14.0 ft) x 2.44 m (8.0 ft)
Nominal Thickness: 6.4 mm (0.252 in.)
Overall Weight: 68.95 kg (152 lbs)
Surface Density: 6.63 kg/m² (1.36 lb/ft²)
Joints: Sealed with tape



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

Audimute
2017-11-15

RAL-IN17-052
Page 2 of 8

Floor Covering

Trade Name: Barrel Wood Light Vinyl Plank Flooring
Material: Luxury vinyl tile
Plank Dimensions: 152.4 mm (6 in.) x 1219.2 mm (48 in.)
Nominal Thickness: 4.2 mm (0.165 in.)
Overall Weight: 74.39 kg (164 lbs)
Surface Density: 7.15 kg/m² (1.46 lb/ft²)

Physical Measures

Size: 4.27 m (168.00 in.) wide by 2.44 m (96.00 in.) long
Thickness: 213.87 mm (8.42 in.)
Weight: 5166.50 kg (11390.00 lbs.)
Transmission Area: 10.40 m² (112.00 ft²)
Mass per Unit Area: 496.54 kg/m² (101.70 lbs./ft²)

Test Aperture

Size: 4.27 m (14.0 ft.) by 2.44 m (8 ft.)
Filler Wall: None
Sealed: Entire periphery (both sides) with dense mastic

Test Environment

Source Room

Volume: 130.5 m³ (4,607.0 ft³)
Temperature: 23±0°C (74±1°F)
Humidity: 63±2%

Receive Room

Volume: 82.9 m³ (2,927.1 ft³)
Temperature: 22±0°C (71±0°F)
Humidity: 65±1%

Requirements

Temperature: 22° C +/- 5° C, not more than 3° C change over all tests.
Humidity: ≥ 30% RH; not more than +/- 3% change over all tests.



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

Audimute
2017-11-15

RAL-IN17-052
Page 3 of 8



Figure 1 – Specimen mounted in the test opening.



Figure 2 – Detail of underlayment prior to joint treatment

Test Report

Audimute
2017-11-15

RAL-IN17-052
Page 4 of 8

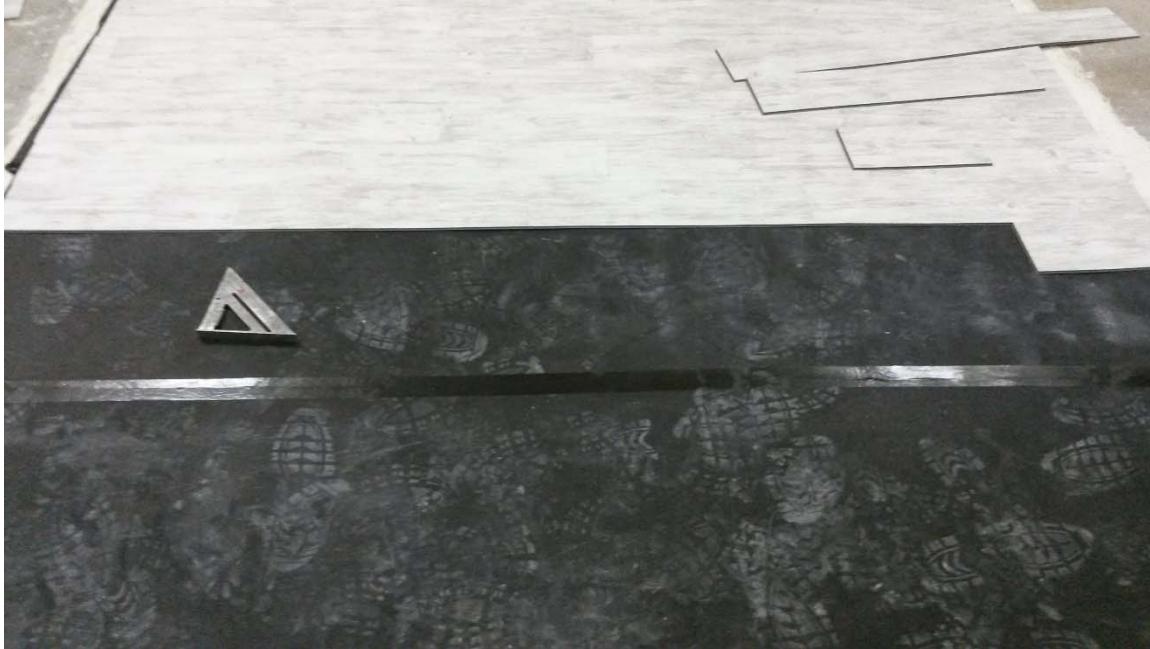


Figure 3 – Detail of floor covering partially installed



Figure 4 – Underside of test specimen

Test Report

Audimute
2017-11-15

RAL-IN17-052
Page 5 of 8

TEST RESULTS

The impact sound pressure levels, normalized to 10 m², are tabulated at the sixteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the test data is within the limits set by the ASTM Standard E989-06 (2012).

<u>FREQ.</u>	<u>Ln</u>	<u>C.L.</u>	<u>DEV</u>	<u>FREQ.</u>	<u>Ln</u>	<u>C.L.</u>	<u>DEV</u>
100	57	0.67	1	800	52	0.49	
125	53	1.17		1000	46	0.37	
160	54	0.69		1250	38	0.43	
200	56	1.14		1600	28	0.45	
250	64	0.99	8	2000	24	0.60	
315	59	1.03	3	2500	19	0.59	
400	57	0.52	2	3150	13	0.71	
500	54	0.52					
630	55	0.52	2				

IIC=56

ABBREVIATION INDEX

- FREQ. = FREQUENCY, HERTZ, (cps)
- Ln = NORMALIZED IMPACT SOUND PRESSURE LEVEL, dB
- C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
- DEV. = DEVIATION, dB > IIC CONTOUR (SUM OF DEV = 16)
- IIC = IMPACT INSULATION CLASS
- * = INDICATES A CORRECTION HAS BEEN APPLIED TO DATA DUE TO BACKGROUND NOISE LEVELS

Tested by *Marc Sciaky*
Marc Sciaky
Experimentalist

Report by *Malcolm Kelly*
Malcolm Kelly
Acoustician

Approved by *Eric P. Wolfram*
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.

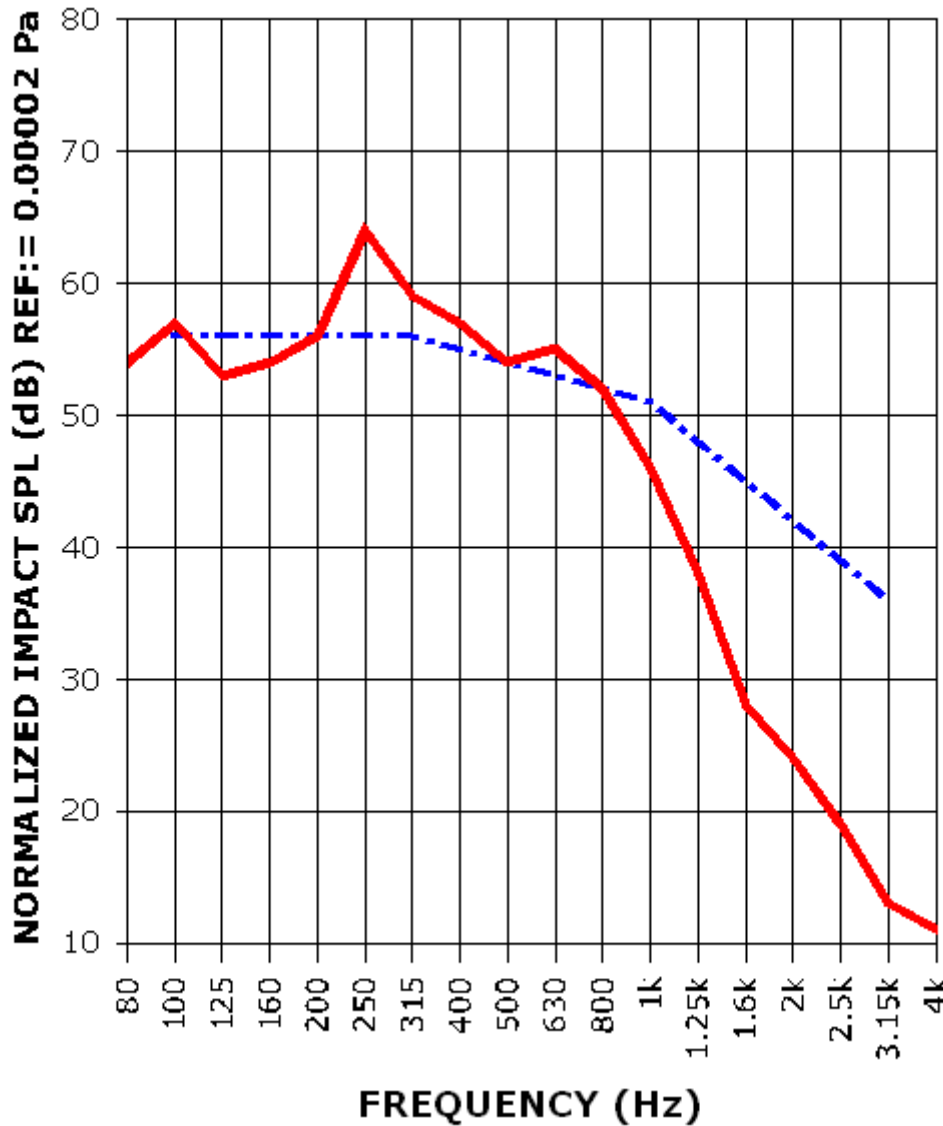
Test Report

Audimute
2017-11-15

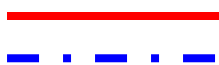
RAL-IN17-052
Page 6 of 8

IMPACT SOUND TRANSMISSION REPORT

LVT flooring over Peacemaker Soundproofing Underlayment over 8" Concrete Slab
No Ceiling



IIC=56



IMPACT SOUND PRESSURE LEVEL
IMPACT INSULATION CLASS CONTOUR



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

Audimute
 2017-11-15

RAL-IN17-052
 Page 7 of 8

APPENDIX A: Extended Frequency Range Data

Specimen: LVT flooring over Peacemaker Soundproofing Underlayment over 8" Concrete Slab No Ceiling
 (See Full Report)

The following non-accredited data were obtained in accordance with ASTM E989-06 (2012), but extend beyond the defined frequency range of 100Hz to 3,150Hz. These unofficial results are representative of the RAL test environment only and intended for research & comparison purposes.

1/3 Octave Band Center Frequency (Hz)	Normalized Impact Sound Pressure Level (dB)	Repeatability (95% ±)
31.5	61	1.59
40	52	0.75
50	55	0.60
63	56	0.54
80	54	0.55
100	57	0.67
125	53	1.17
160	54	0.69
200	56	1.14
250	64	0.99
315	59	1.03
400	57	0.52
500	54	0.52
630	55	0.52
800	52	0.49
1000	46	0.37
1250	38	0.43
1600	28	0.45
2000	24	0.60
2500	19	0.59
3150	13	0.71
4000	11	0.77
5000	8	1.15
6300	7	1.21
8000	8	1.50
10000	9	1.36
12500	10	1.46



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

Audimute
2017-11-15

RAL-IN17-052
Page 8 of 8

APPENDIX B: Instruments of Traceability

Specimen: LVT flooring over Peacemaker Soundproofing Underlayment over 8" Concrete Slab No Ceiling
(See Full Report)

<u>Description</u>	<u>Model</u>	<u>Serial Number</u>	<u>Date of Certification</u>	<u>Calibration Due</u>
Bruel & Kjaer Pulse Analyzer - System4	Type 3560-C	2639093	2017-08-02	2018-08-02
Bruel & Kjaer Mic And Preamp E	Type 4943-B-001	2311441	2017-03-17	2018-03-17
Bruel & Kjaer Tapping Machine-WoodCase	3204	226940	2017-07-11	2018-07-11
Bruel & Kjaer Pistonphone	Type 4228	2781248	2017-08-02	2018-08-02
Omega Digital Thermo-Hygrometer D	Model # RH411	H0102210	2017-07-19	2018-07-19
Omega Digital Thermo-Hygrometer E	Model # RH411	H0100711	2017-01-16	2018-01-16

END