

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

An  ALION Technical Center

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FOUNDED 1918 BY
WALLACE CLEMENT SABINE

Test Report

FOR: **Sof Surfaces Inc.**
Petrolia, Ontario, Canada

Sound Transmission Loss
RAL-TL18-372

CONDUCTED: 2018-06-06
ON: 2.75 in. thick duraSOUND over 6 in. concrete slab

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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 (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 measuring procedure and room qualifications is available upon request. The transmission loss values are for a single direction of measurement. The product designation used in this report was provided to RAL by the sponsor and attributed to the specimen under test.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as 2.75 in. thick duraSOUND over 6 in. concrete slab. A full external visual inspection performed on the test specimen by Riverbank personnel verified the manufacturer's description.

The building contractor and RAL staff compiled the following construction specification, in order of installation:

Concrete Slab

Material: Wire-reinforced concrete
Dimensions: 4 @ 609.6 mm (24 in.) x 4267.2 mm (168 in.)
Thickness: 152.4 mm (6 in.)
Overall Weight: 3467.71 kg (7645 lbs)
Mass per Unit Area: 333.27 kg/m² (68.26 lb/ft²)
Joints: Underside sealed with acoustical caulk and tape
Top filled with general purpose sand, sealed with ready mix compound

Flooring

Trade Name: duraSOUND
Material: 100 % recycled crumb rubber
Panel Dimensions: 612.78 mm (24.125 in.) x 612.78 mm (24.125 in.)
Overall Thickness: 69.85 mm (2.75 in.)
Installation: Loose laid on concrete slab
Rubber support pedestals @ 49.28 mm (1.94 in.) diameter x 31.75 mm (1.25 in.) high, placed under corners where four panels meet
Panels held together by integrated lap joints
Overall Weight: 399.73 kg (881.25 lbs)
Mass per Unit Area: 38.42 kg/m² (7.87 lb/ft²)

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Physical Measures

Overall Dimensions: 2.44 m (96.00 in.) wide by 4.27 m (168.00 in.) high
Overall Thickness: 222.25 mm (8.75 in.)
Overall Weight: 3867.51 kg (8526.25 lbs.)
Transmission Area: 10.40 m² (112.00 ft²)
Mass per Unit Area: 371.70 kg/m² (76.13 lbs./ft²)

Test Aperture

Size: 4.27 m (14.0 ft) by 2.44 m (8.0 ft.)
Filler Wall: None
Sealed: Entire periphery (both sides) with dense mastic

Test Environment

Source Room

Volume: 130.8 m³ (4618.0 ft³)
Temperature: 22±0°C (72±0°F)
Humidity: 54±0%

Receive Room

Volume: 82.5 m³ (2914.6 ft³)
Temperature: 21±0°C (70±0°F)
Humidity: 56±0%

Requirements

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

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Figure 1 – Specimen mounted in test opening



Figure 2 – duraSOUND panels

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Figure 3 – Typical support pedestal installation



Figure 4 – Flooring partially installed

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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 (2016).

<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	35	0.41		800	66	0.22	
125	42	2.68		1000	69	0.17	
160	42	0.83	2	1250	73	0.17	
200	43	0.72	4	1600	76	0.14	
250	43	0.57	7	2000	79	0.10	
315	47	0.51	6	2500	82	0.11	
400	48	0.59	8	3150	86	0.09	
500	55	0.30	2	4000	87	0.09	
630	63	0.35		5000	82	0.08	

STC=57

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)

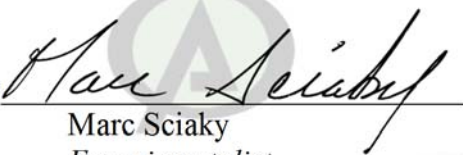
T.L. = TRANSMISSION LOSS, dB

C.L. = SAMPLING PRECISION DURING TEST IN dB, FOR A 95% CONFIDENCE LIMIT

DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 29)

STC = SOUND TRANSMISSION CLASS

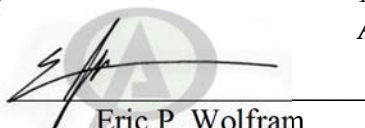
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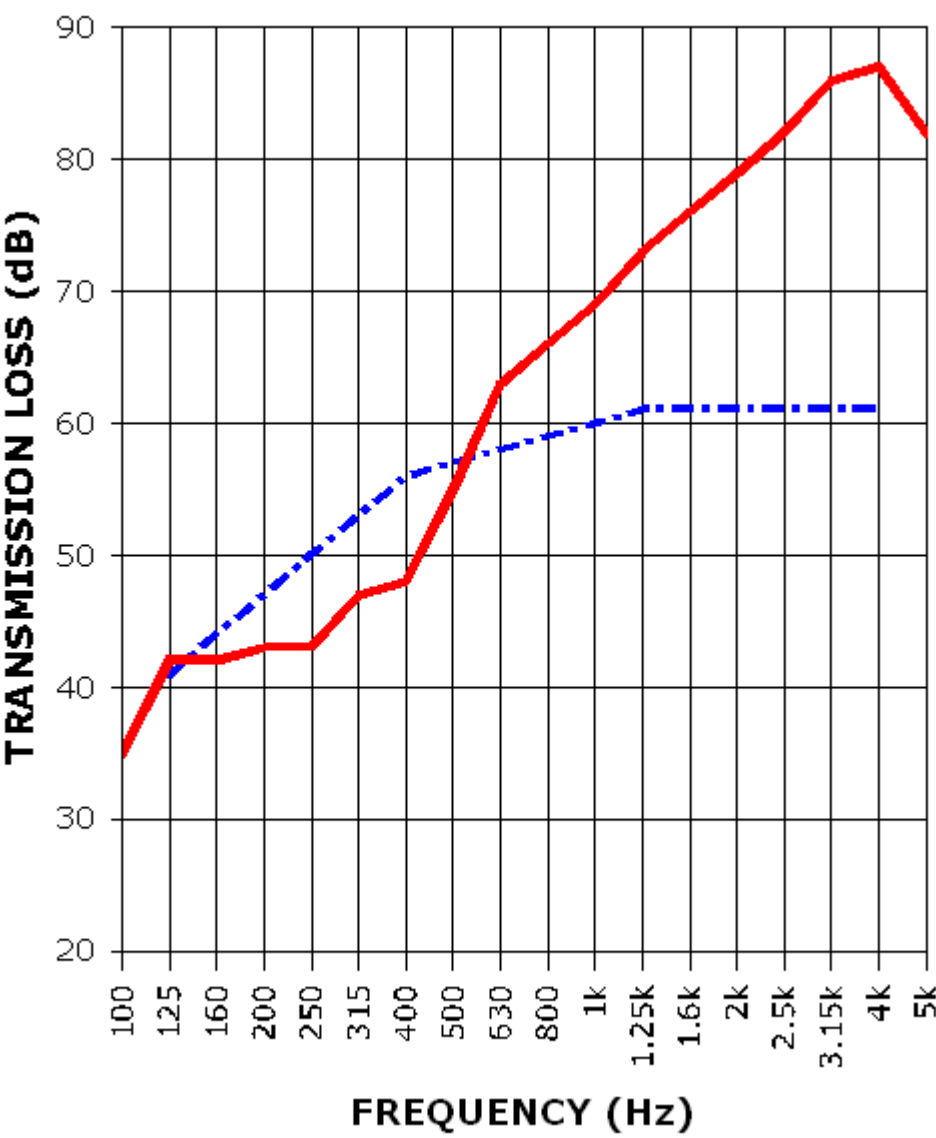
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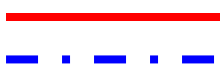
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SOUND TRANSMISSION REPORT
2.75 in. thick duraSOUND over 6 in. concrete slab



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TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR

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APPENDIX A: Extended Frequency Range Data

Specimen: 2.75 in. thick duraSOUND over 6 in. concrete slab (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.

1/3 Octave Band Center Frequency (Hz)	Sound Transmission Loss (dB)	Sampling Precision (95% ±)
31.5	47	58.69
40	34	1.14
50	35	0.86
63	34	1.03
80	39	0.97
100	35	0.41
125	42	2.68
160	42	0.83
200	43	0.72
250	43	0.57
315	47	0.51
400	48	0.59
500	55	0.30
630	63	0.35
800	66	0.22
1000	69	0.17
1250	73	0.17
1600	76	0.14
2000	79	0.10
2500	82	0.11
3150	86	0.09
4000	87	0.09
5000	82	0.08
6300	78	0.07
8000	74	0.08
10000	67	0.05
12500	54	0.13



NVLAP LAB CODE 100227-0

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THIS REPORT SHALL NOT BE MODIFIED 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 SAMPLE.

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APPENDIX B: Instruments of Traceability

Specimen: 2.75 in. thick duraSOUND over 6 in. concrete slab (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 D	Type 4943-B-001	2311440	2017-09-22	2018-09-22
Bruel & Kjaer Pistonphone	Type 4228	2781248	2017-08-02	2018-08-02
EXTECH_62	SD700	A.083662	2017-11-20	2018-11-20
EXTECH_63	SD700	A.083663	2017-11-20	2018-11-20

END