

RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE
GENEVA, ILLINOIS 60134

Alion Science and Technology

630/232-0104
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

TEST REPORT

FOR: **Allied Industries International, Inc.**
Jonesville, SC

Sound Transmission Loss
RAL™-TL13-177

CONDUCTED: 25 September 2013

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ON: Recycled PVC Sheet Food Service Finish or Smooth Charcoal over Six Inch Concrete Slabs (No Ceiling).

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-09 and E413-10, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure (NVLAP Lab Code: 100227-0). A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the client as Recycled PVC Sheet Food Service Finish or Smooth Charcoal over 6 Inch Concrete Slabs (No Ceiling). From the top to bottom, the floor consisted of 7.11 mm (0.28 in.) thick PVC Sheet flooring over 152 mm (6 in.) thick concrete reference slab. A detailed description of each component appears below.

The overall dimensions of the specimen as measured were nominally 4.27 m (168.00 in.) wide by 6.10 m (240.00 in.) high and 159.51 mm (6.28 in.) thick. The specimen was constructed directly in the laboratory's 4.27 m (14 ft) by 6.10 m (20 ft) test opening and was sealed on the periphery (above and below) with dense mastic. The transmission area used in the calculations was 26.0 m² (280 ft²). The weight of the specimen as measured was 8,872.4 kg (19,560.0 lbs.), an average of 341.1 kg/m² (69.9 lbs/ft²).

The source room temperature at the time of the test was 22±0°C (72±1°F) and 54±0% relative humidity. The receiving room temperature at the time of the test was 22±0°C (72±1°F) and 54±1% relative humidity. The source and receive reverberation room volumes were 139.6 m³ (4,929.5 ft³) and 87.0 m³ (3,072.7 ft³), respectively.



NVLAP Lab Code 100227-0

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Flooring

The finished floor consisted of black, resilient flooring and was labeled: Recycled PVC Sheet Food Service Finish or Smooth Charcoal. The flooring consisted of eight pieces. Four measured 1.52 m (60 in.) wide by 2.44 m (96 in.) long by 7.11 mm (0.28 in.) thick. Four measured 1.52 m (60 in.) wide by 1.83 m (72 in.) long by 7.11 mm (0.28 in.) thick. The flooring was laid directly over the 6 inch concrete reference slab. Intermediate seams were sealed with laboratory tape. The total weight of the rubberized tile was 231.33 kg (510 lbs.).

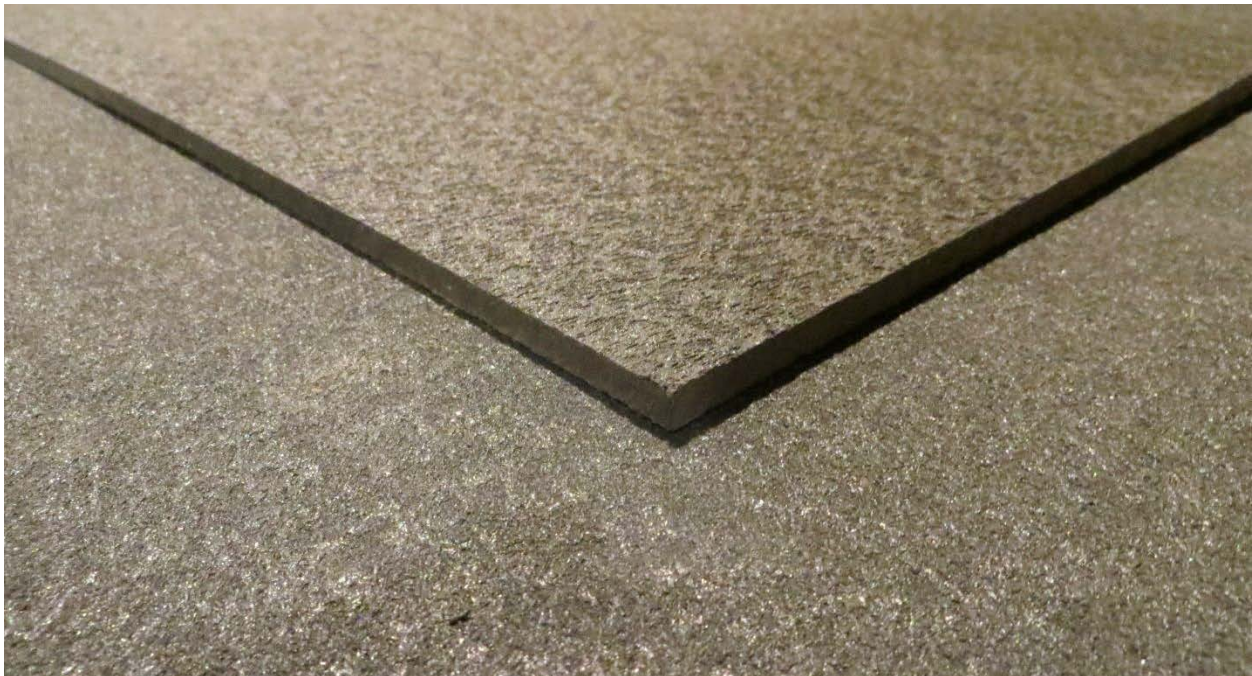


Figure 1 - Profile of Flooring Sheet

6" Concrete Reference Slab

The concrete slab sub-floor consisted of ten nominally 610 mm (24 in.) wide by 4.23 m (166.5 in.) long by 152 mm (6 in.) thick wire-reinforced concrete slabs. Total weight of the concrete slabs was 8641 kg (19,050 lbs.). After installation, the underside of the seam between each slab was sealed with acoustical caulk; the entire perimeter was sealed with dense laboratory mastic. The remaining gap at the perimeter and between each slab was filled with general purpose sand. Ready mix joint compound was used to seal and level the slab surface (top). The slab surface was protected, covered with a single layer of red rosin paper.



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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 TL 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	35	0.66		800	54	0.23	2
125	38	0.75		1000	58	0.18	
160	39	0.49	2	1250	65	0.16	
200	41	0.50	3	1600	68	0.14	
250	42	0.78	5	2000	74	0.10	
315	45	0.61	5	2500	78	0.12	
400	47	0.48	6	3150	82	0.08	
500	50	0.31	4	4000	84	0.08	
630	52	0.28	3	5000	86	0.06	

STC=54

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)

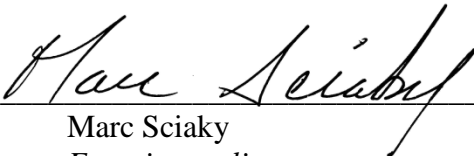
T.L. = TRANSMISSION LOSS, dB

C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT

DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 30)

STC = SOUND TRANSMISSION CLASS

Tested by


Marc Sciaky
Experimentalist

Approved by

Eric P. Wolfram
Laboratory Manager



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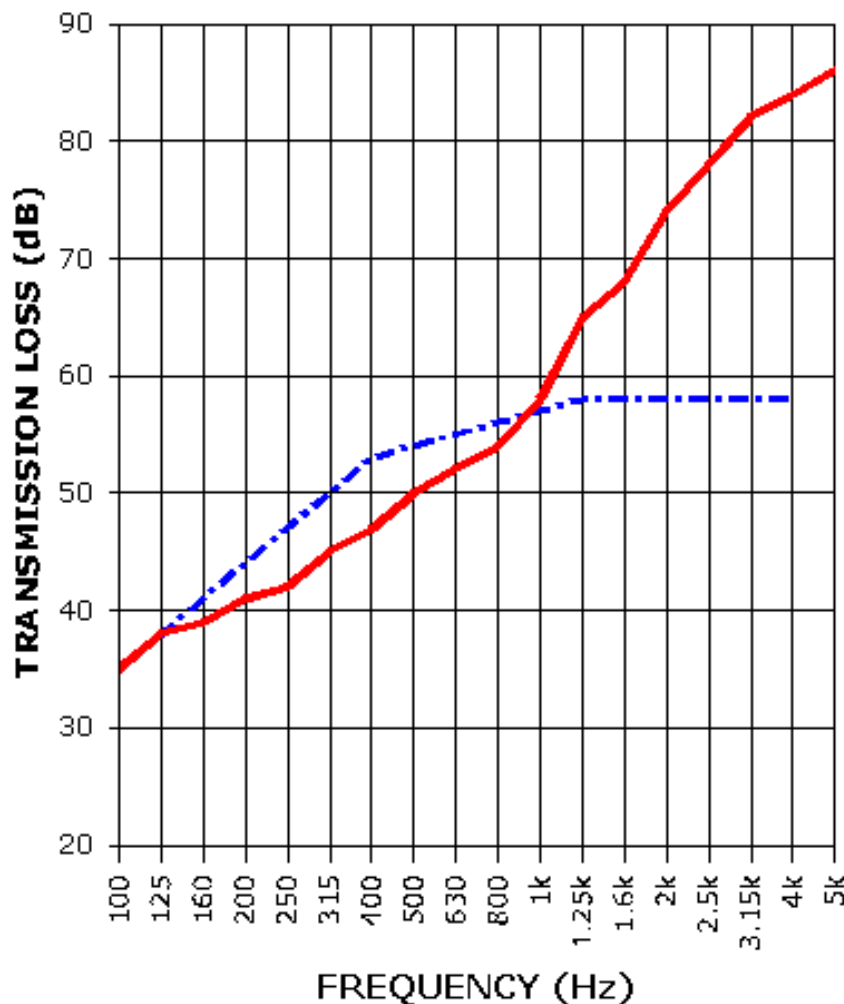
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SOUND TRANSMISSION REPORT

Recycled PVC Sheet Food Service Finish or Smooth Charcoal over Six Inch
Concrete Slabs (No Ceiling).



STC=54



**TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR**



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Appendix to ASTM E90 Sound Transmission Loss Test

Extended Frequency Range Data

Product Description: Recycled PVC Sheet Food Service Finish or Smooth Charcoal over Six Inch Concrete Slabs (No Ceiling). (See Full Report)

As requested by the client, transmission loss (TL) values were calculated at additional test frequencies. Although the measurements were made in accordance with the procedures described in ASTM E90-09, they do not qualify as part of the standard. Since the results are representative of the test environment only, they are unofficial and intended for research and development guidelines rather than for commercial purposes. The transmission loss values at the additional frequencies were as follows:

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1/3 Octave Center Frequency

Sound Transmission Loss

<u>(Hz)</u>	<u>(dB)</u>
40	43
50	37
63	37
80	37
6300	86
8000	80
10000	73



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