

FOR: Kahrs International, Inc.

Sound Transmission Loss Test
RAL™-TL02-27

ON: Kahrs Red Oak Linnea Woodloc Floor With
Underlayment on a 6 Inch Concrete Slab Floor
With Suspended 5/8 Inch Gypsum Ceiling

Page 1 of 4

CONDUCTED: 25 January 2002

REVISION: 18 March 2002

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-99 and E413-87, 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. A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as Kahrs Red Oak Linnea Woodloc Floor with underlayment on a 6 inch concrete slab floor with suspended 5/8 inch gypsum ceiling. The overall dimensions of the specimen as measured were 6.10 m (240 in.) wide by 4.27 m (168 in.) high and 408 mm (16 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 (both sides) with a dense mastic.

The weight of the specimen as measured was 9,088 kg (20,036 lbs.), an average of 350 kg/m² (71.6 lbs/ft²). The transmission area used in the calculations was 26 m² (280 ft²). The source and receiving room temperatures at the time of the test were 21±1°C (69±1°F) and 56±3% relative humidity. The source and receive reverberation room volumes were 130.3 m³ (4,598.8 ft³) and 91.6 m³ (3,235.8 ft³), respectively.

The description of the specimen was as follows: From the top down, the floor consisted of 7 mm (0.28 in.) thick Woodloc flooring, 2 mm (0.08 in.) thick combo underlayment, 152 mm (6 in.) thick wire reinforced concrete, a 229 mm (9 in.) deep plenum with 89 mm (3.5 in.) thick fiberglass insulation, and 16 mm (0.625 in.) thick Type X gypsum board. A more detailed description of the test assembly appears in the following sections.

REVISION: 18 March 2002

Red Oak Linnea Woodloc Floor and Underlayment Material

The finished floor consisted of 7 mm (0.28 in.) thick Woodloc flooring provided as 193 mm (7.6 in.) wide by 1.23 m (48.2 in.) long planks with Woodloc edges. Total weight of the wood floor was 162.4 kg (358 lbs). Prior to installation of the floor, a plastic membrane encapsulated beaded material measuring 2 mm (0.08 in.) thick was loose laid over the concrete slabs.

Concrete Floor and Ceiling Assembly

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. Weight of the concrete slab was 8,599 kg (18,958 lbs). Split drive pins were inserted into the bottom of the slabs on 1.22 m (48 in.) centers and used to tie 12 gauge hanger wire for the suspended ceiling. The hanger wires were tied to allow for a nominal 229 mm (9 in.) plenum depth from the bottom of the slabs to the top of the ceiling. Cold rolled steel carrying channels were tied to the hanger wires and eleven lengths of 24 gauge galvanized steel DWC channels (hat channels) were saddle tied perpendicular to the cold rolled channels with double strands of 18 gauge tie wire. The plenum between the sub-floor and the ceiling contained a single layer of 89 mm (3.5 in.) thick, R-11 unfaced fiberglass insulation. The ceiling was 16 mm (0.625 in.) thick, Type X gypsum board attached to the DWC channel with 25 mm (1 in.) Type S screws on 305 mm (12 in.) centers. Joints were treated with paper tape embedded in all-purpose joint compound and screw heads were covered with compound. Weight of the gypsum board was 250 kg (552 lbs). Total weight of the ceiling assembly was 322 kg (710 lbs).

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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 E90-99.

<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	28	0.34	0	800	66	0.24	0
125	40	0.07	3	1000	70	0.20	0
160	42	0.32	4	1250	74	0.20	0
200	45	0.33	4	1600	78	0.19	0
250	47	0.23	5	2000	80	0.16	0
315	49	0.22	6	2500	82	0.16	0
400	55	2.06	3	3150	87	0.11	0
500	58	0.53	1	4000	89	0.12	0
630	63	0.24	0	5000	91	0.08	0

STC=59

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

STC = SOUND TRANSMISSION CLASS

Tested by _____ Approved by _____
 Dean Victor Senior Experimentalist David L. Moyer Laboratory Manager

FOR: Kahrs International, Inc.

Impact Sound Transmission Test

RAL™-IN02-8

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With Suspended 5/8 Inch Gypsum Ceiling

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REVISION: 18 March 2002

TEST METHOD

The measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E492-90 and E989-89, 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. A description of the measuring technique is available separately.

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TEST RESULTS

Sound pressure levels at 1/3 octave intervals, normalized to 10 square meters, are given in tabular form. The impact insulation class, IIC, was computed in accordance with ASTM E989-89 and ASTM E492-90.

<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	60	0.66	8	800	29	0.34	0
125	53	0.38	1	1000	25	0.33	0
160	52	0.49	0	1250	20	0.45	0
200	50	0.37	0	1600	15	0.72	0
250	49	0.46	0	2000	13	0.41	0
315	47	0.65	0	2500	12	0.66	0
400	43	0.52	0	3150	8	0.50	0
500	39	0.59	0	4000	7	0.05	0
630	34	0.57	0	5000	8	0.42	0

IIC=60

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

IIC = IMPACT INSULATION CLASS

* = INDICATES A CORRECTION HAS BEEN APPLIED TO DATA
DUE TO BACKGROUND NOISE LEVELS

Tested by _____ Approved by _____

Dean Victor

Senior Experimentalist

David L. Moyer

Laboratory Manager