

FOR: Kahrs International, Inc.

Sound Transmission Loss Test
RAL™-TL02-26

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

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CONDUCTED: 25 January 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 Gent 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 418 mm (16.375 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 9,146 kg (20,163 lbs.), an average of 352 kg/m² (72 lbs/ft²). The transmission area used in the calculations was 26 m² (280 ft²). The source room temperature at the time of the test was 21±1°C (69±1°F) and 63±3% relative humidity. The receiving room temperature at the time of the test was 19±1°C (67±1°F) and 57±1% 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 15 mm (0.6 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.

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Page 2 of 4Red Oak Gent Woodloc Floor and Underlayment Material

The finished floor consisted of 15 mm (0.6 in.) thick Woodloc flooring provided as 200 mm (7.88 in.) wide by 2.42 m (95.375 in.) long planks with Woodloc edges. Total weight of the wood floor was 220 kg (485 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	29	0.54	0	800	66	0.19	0
125	40	0.09	3	1000	70	0.23	0
160	42	0.06	4	1250	74	0.21	0
200	44	0.10	5	1600	78	0.14	0
250	46	0.17	6	2000	80	0.16	0
315	49	0.17	6	2500	81	0.16	0
400	56	0.22	2	3150	87	0.12	0
500	58	0.19	1	4000	89	0.11	0
630	63	0.26	0	5000	90	0.07	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 David L. Moyer
 Senior Experimentalist Laboratory Manager

FOR: Kahrs International, Inc.

Impact Sound Transmission Test

RAL™-IN02-7

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

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CONDUCTED: 25 January 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	61	0.71	8	800	33	0.18	0
125	54	0.56	1	1000	28	0.27	0
160	53	0.66	0	1250	24	0.13	0
200	53	0.51	0	1600	20	0.20	0
250	52	0.26	0	2000	19	0.28	0
315	51	0.26	0	2500	17	0.22	0
400	47	0.23	0	3150	12	0.98	0
500	43	0.15	0	4000	12	1.50	0
630	39	0.15	0	5000	11	1.25	0

IIC=59

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