Test Report No.: A-2025-139-01

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The accreditation is valid for the test procedures listed in the annex of the certificate D-PL-11217-01-00.

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Test Order:	Laboratory measurement of the reduction of transmitted impact sound by floor coverings on a reference floor according to DIN EN ISO 10140-1,3:2021-09
Order date:	17.04.2025
Sample description:	acoustic underlay
a)	Redfloor 1,0
Number of samples:	N/A
Sampling:	by client
Sample receipt:	17.04.2025
Test period:	17.04.2025

Aachen, 22.04.2025

i.V. Prof. Dr.-Ing. Alexander Siebel
Laboratory Manager

i.V. Patrick Thomas M.Eng
Deputy Laboratory Manager

The test results relate only on the items tested. Without the written approval of the testing laboratory, a duplication in extracts of the test report is not permitted.

a) Information provided by the client, k) Modification

1 Product Description

Product Description a) (Construction from top to bottom)

Position	Description	Thickness [mm]	Weight [g/m²]
1	LVT click 4,5mm	4,5	7700
2	Redfloor 1,0	1,0	190
3	PE-film	0,2	160

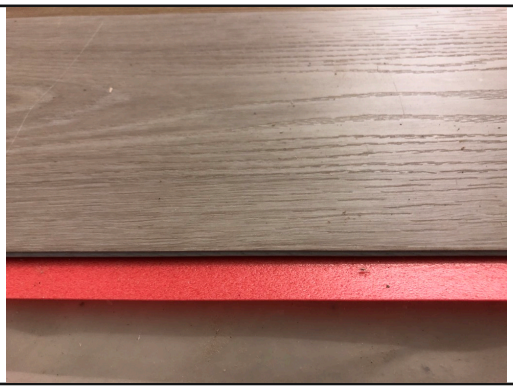

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Illustration / drawing for sample assembly

2 Scope of testing / Annexes

No.	Annex	Designation	Standard	Pages
1	TS	Impact Sound Reduction	DIN EN ISO 10140-1,3:2021-09	3

Form T Reporting 0001_R:11

a) Information provided by the client, k) Modification

1 Test stand description

Test rooms:	Laboratory of Kiwa GmbH, Hauptstraße 133, 52477 Alsdorf
Sending room:	4,27 m x 4,45 m x 2,74 m; V = 52,1 m³ (cubic, with diffusers)
Receiving room:	3,95 m x 4,08 m x 3,33 m; V = 53,6 m³ (cubic, with diffusers)
Test floor:	4,27 m x 4,45 m; S = 19 m² 14 cm homogeneous heavyweight concrete slab floor with an area-related mass of m‘ ≈ 322 kg/m² (no ceiling below)
Flanking walls:	lime sand brick walls with light weighting facing shells (d = 12cm) with a medium area-related mass of m‘ ≈ 330 kg/m²

2 Analysis

The impact sound levels generated by the standardized tapping machine are measured in the receiving room below a solid floor without and with the floor covering. From the measured values the reduction of impact sound pressure is calculated as follows:

ΔL = $L_{n,0}$ - L_n in dB

$L_{n,0}$ = Impact sound level without floor covering in dB

L_n = Impact sound level with floor covering in dB

To determine the weighted impact sound reduction the applicable reference curve is shifted in 1 dB steps into the measured curve so that the sum of the most unfavorable deviations correspondents as close as possible to the value of 32 dB without exceeding this value.

The linear impact sound level ΔL_{lin} you can calculate after the following equation:

$$\Delta L_{lin} = L_{n,r,0,w} + C_{I,r,0} - \left(L_{n,r,w} + C_{I,r}\right) = \Delta L_w + C_{I,\Delta}$$

$L_{n,r,w}$	the calculated weighted norm impact sound level of the cover blanket with the blanket edition to be checked is.
$L_{n,r,0,w}$	78 dB, investigates$L_{n,r,0}$ to 4.3.1 DIN EN ISO 717-2:2021-05.
$C_{I,r}$	Spectrum customization value.
$C_{I,r,0}$	Spectrum customization value.

2.1 Test Standards

Standard: (Issue)	Title
DIN EN ISO 10140-1:2021-09	Acoustics — Laboratory measurement of sound insulation of building elements — Part 1: Application rules for specific products
DIN EN ISO 10140-2:2021-09	Acoustics — Laboratory measurement of sound insulation of building elements — Part 2: Measurement of airborne sound insulation
DIN EN ISO 10140-3:2021-09	Acoustics — Laboratory measurement of sound insulation of building elements — Part 3: Measurement of impact sound insulation
DIN EN ISO 10140-4:2021-09	Acoustics — Laboratory measurement of sound insulation of building elements — Part 4: Measurement procedures and requirements
DIN EN ISO 10140-5:2021-09	Acoustics — Laboratory measurement of sound insulation of building elements — Part 5: Requirements for test facilities and equipment

2.2 Evaluation Standards

Standard: (Issue)	Title
DIN EN ISO 717-2:2021-05	Acoustics — Rating of sound insulation in buildings and of building elements — Part 2: Impact sound insulation
DIN EN ISO 12999-1:2021-04	Acoustics — Determination and application of measurement uncertainties in building acoustics — Part 1: Sound insulation

3 Note

The results are based on measurements performed under laboratory conditions with artificial excitation (standard procedure). The test results are applicable in due consideration of the national provisions and the local circumstances and/or constructions.

Reduction of impact sound pressure level according to DIN EN ISO 10140-1,3:2021-09

Laboratory measurement of the reduction of transmitted impact sound by floor coverings on a reference floor

Evaluation according DIN EN ISO 717-2-2021-05

Measurement uncertainty according DIN EN ISO 12999-1:2021-04

Construction: a) (from top to bottom)	LVT click 4,5mm Redfloor 1,0 PE-film
Test floor:	14 cm concrete slab floor (4,27 m x 4,45 m) with an area-related mass m' ≈ 322 kg/m² (no ceiling)
Remarks:	-

Installation:	by the client	
Receiving room:		
Volume:	53,6	m³
Sending room:		
Volume:	52,1	m³
Air temperature:	19,4	°C
Relative air humidity:	48,3	%

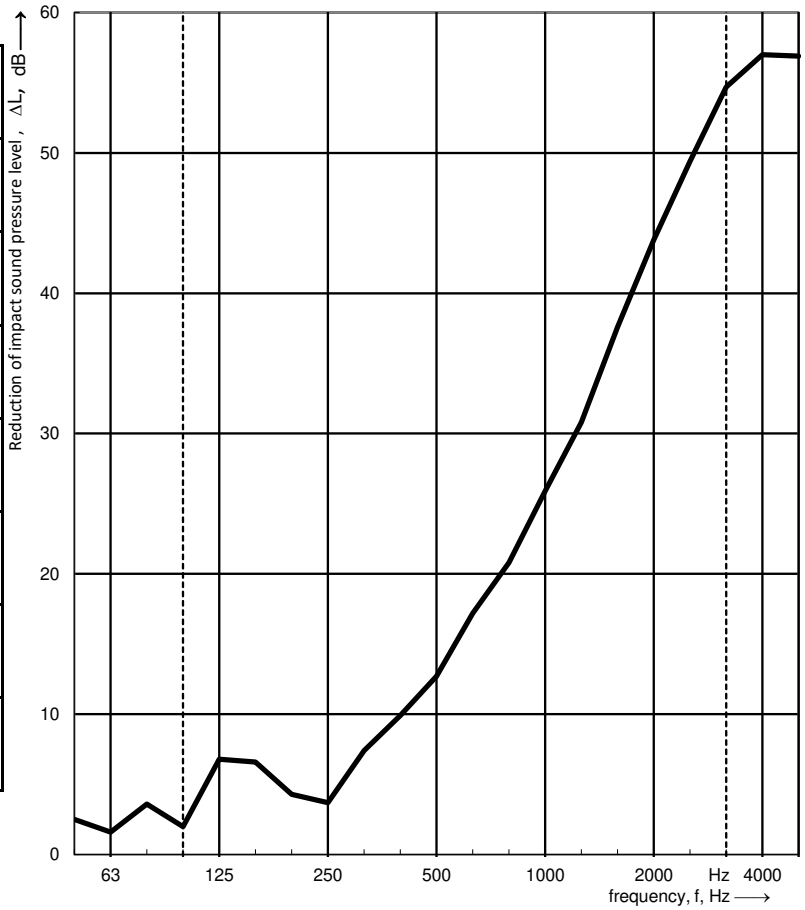
Boundary conditions:	
Tapping Machine positions:	4
Microphone positions:	continuously moved
Category / sample area:	II / 10 m²
Type of reference floor:	heavyweight reference floor

Date of test: 17.04.2025

Frequency f [Hz]	$L_{n,0}$ 1/3 oct. [dB]	ΔL 1/3 oct. [dB]	U 1/3 oct. [dB]
50	52,2	2,5	± 1,4
63	55,0	1,6	± 1,3
80	58,0	3,6	± 1,2
100	60,6	2,0	± 1,1
125	68,7	6,8	± 1,0
160	62,9	6,6	± 1,0
200	62,2	4,3	± 1,0
250	65,5	3,7	± 1,0
315	64,7	7,4	± 1,0
400	64,9	9,9	± 1,1
500	63,9	12,7	± 1,2
630	65,0	17,2	± 1,3
800	65,3	20,8	± 1,6
1000	66,1	25,9	± 1,9
1250	66,7	30,8	± 2,2
1600	66,5	37,6	± 2,5
2000	67,4	43,8	± 2,8
2500	67,3	49,4	± 3,2
3150	68,1	54,7 [3]	± 3,6
4000	67,4	57,0 [3]	± 4,0
5000	64,1	56,9 [1]	± 4,4

[1] Measurement limit reached

[3] correction



Evaluation according DIN EN ISO 717-2-2021-05

ΔL_w = 21 dB $C_{I,\Delta}$ = -11 dB

ΔL_{lin} = 10 dB $C_{I,r}$ = 0 dB

Measurement uncertainty according DIN EN ISO 12999-1:2021-04

ΔL_w = (21,1 ± 1,1) dB (k = 1, two-sided)

These results are based on a test performed with an artificial source under laboratory conditions (engineering method) with the specified reference floor.

Annex TS - ΔLw

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