

Test Report No.: U-2702_106-01



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The Netherlands

Test Order: Laboratory measurement of impact sound insulation of building elements according
DIN EN ISO 10140-3:2015-11

Order date : 9 juni 2023

Sample description : Test op vaste zandcement vloer

Number of samples : N/A

Sampling : by client

Sample receipt :

Test period : 9 juni 2023

Deventer, 14 juli 2023

A handwritten signature in black ink, appearing to be 'F. Vousten'.

F. Vousten

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.

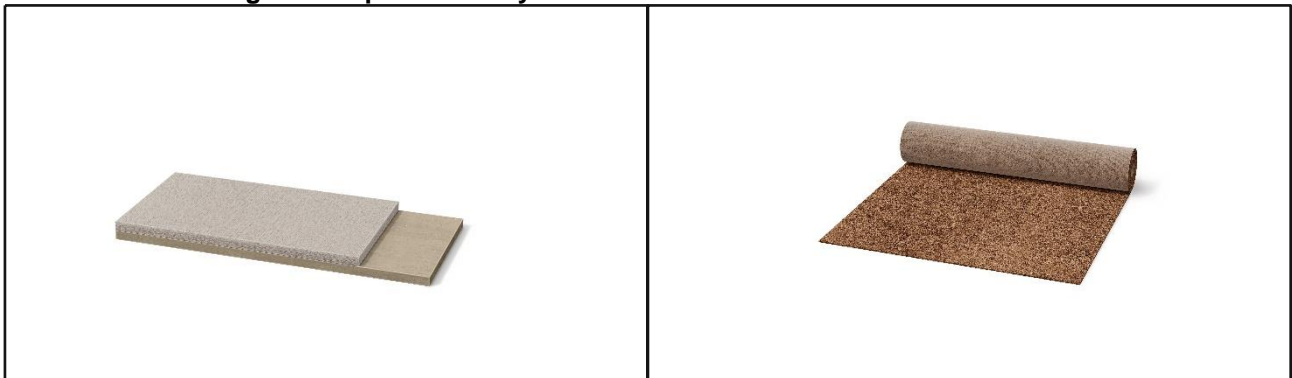
1 Product Description

Product Description (Construction from top to bottom)

* customer information

Position	Description	Thickness [mm]	Weight [kg/m ²]
1	Dual CP	12	15
2	CocoFloor 4mm	4	0,65
3	PE folie	0,002	-

Illustration / drawing for sample assembly



2 Scope of testing / Annexes

No	Annex	Designation	Standard	Pages general	Pages evaluation
1	TS	Impact Sound Insulation	DIN EN ISO 10140-3:2015-11	2	1

General Annex TS for laboratory impact sound tests

1 Test stand description

Test rooms:	Laboratory Unifloor B.V., Lubeckstraat 12, 7418 EV, Deventer
Sending room:	8,0 m x 4,0 m x 2,50 m; V = 80 m ³ (cubic, with diffusers)
Receiving room:	4,0 m x 4,0 m x 3,13 m; V = 50,8 m ³ (cubic, with diffusers)
Reference ceiling:	4,0 m x 4,0 m; S = 16 m ² 14 cm concrete solid plate ceiling with an area-related mass m' ≈ 322 kg/m ²

2 Analysis

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

$$\Delta L = L_{n,0} - L_n \text{ in dB}$$

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

$$L_n = \text{Impact sound level with floor covering in dB}$$

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 corresponds 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:

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

$L_{n,r,w}$ 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 10140-1:2016-12	Akustik – Messung der Schalldämmung von Bauteilen im Prüfstand – Teil 1: Anwendungsregeln für bestimmte Produkte
DIN EN ISO 10140-2:2010-12	Akustik – Messung der Schalldämmung von Bauteilen im Prüfstand – Teil 2: Messung der Luftschalldämmung
DIN EN ISO 10140-3:2015-11	Akustik – Messung der Schalldämmung von Bauteilen im Prüfstand – Teil 3: Messung der Trittschalldämmung
DIN EN ISO 10140-4:2010-12	Akustik – Messung der Schalldämmung von Bauteilen im Prüfstand – Teil 4: Messverfahren und Anforderungen
DIN EN ISO 10140-5:2014-09	Akustik – Messung der Schalldämmung von Bauteilen im Prüfstand – Teil 5: Anforderungen an Prüfstände und Prüfeinrichtungen

2.2 Evaluation Standards

Standard: (Issue)	Title
DIN EN ISO 717-2:2021-05 ²	Akustik – Bewertung der Schalldämmung in Gebäuden und von Bauteilen – Teil 2: Trittschalldämmung
DIN EN ISO 12999-1:2021-04 ²	Akustik - Bestimmung und Anwendung der Messunsicherheiten in der Bauakustik - Teil 1: Schalldämmung
ASTM E989 – 18 ³	Standard Classification for Determination of Single-Number Metrics for Impact Noise
ASTM E2179 - 03(2016) ³	Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors

² german issue

³ american issue

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.

Laboratoriummeting van contactgeluidreductie op een standaard test vloer met vloerafwerking

Annex TS – Impact sound insulation

Testdatum 9-6-2023

Opbouw (kaal)
 (van boven naar beneden) Dual CP 12mm
 CocoFloor 4mm
 PE folie

Remarks:

Zendruimte:

Volume: 90,0 m³

Ontvangstruimte:

Volume: 50,0 m³

Temperatuur: 20,5 °C

Luchtvochtigheid: 51,0 %

Boundary conditions:

Aantal posities hamerslagapparaat: 4

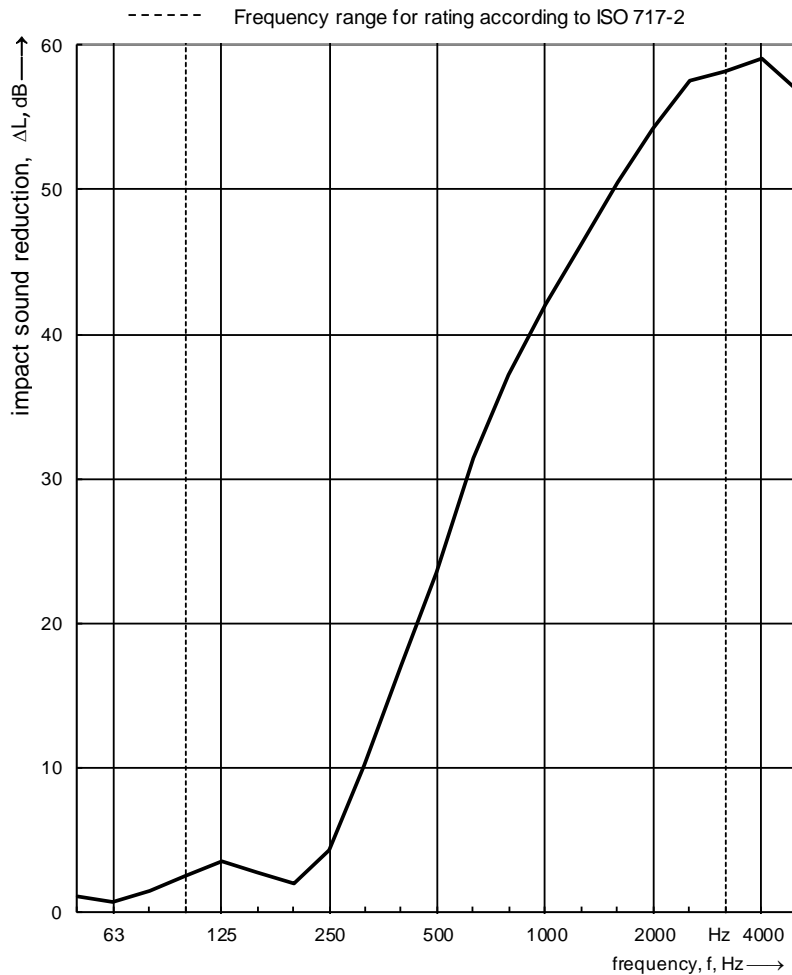
Aantal posities microfoon: 1

Klasse vloer II

Type referentievloer: Heavyweight

Frequency f [Hz]	$L_{n,0}^*$ 1/3 oct. [dB]	ΔL 1/3 oct. [dB]
50	61,4	1,0
63	66,4	0,7
80	62,2	1,5
100	66,6	2,4
125	69,5	3,5
160	71,4	2,7
200	71,0	1,9
250	68,5	4,3
315	64,1	10,1
400	58,2	17,1
500	54,3	23,5
630	47,7	31,4
800	41,8	37,2
1000	37,0	42,0
1250	32,7	46,1
1600	27,7	50,5
2000	23,5	54,3
2500	19,7	57,6
3150	17,4	58,2
4000	14,0	59,1
5000	12,1	56,9

*) informative, without room correction



Evaluation according to ISO 717-2

$\Delta L_w = 21 \text{ dB}$

$C_{i,\Delta} = -11 \text{ dB}$

$C_{i,r} = 0 \text{ dB}$

$\Delta L_{in} = 10 \text{ dB}$

The results are based on measurements, which were performed under laboratory conditions with artificial excitation (standard procedure).