

Sound Reduction Index according to ISO 10140-2

Laboratory measurement of sound insulation of building elements – Measurement of airborne sound insulation



Customer:

KNOPP GmbH
Adolf-Oesterheld-Straße 1
DE-997337 Dettelbach

Composition of the test item (from the transmitting to the receiving room):

Details see in contract no. 20536/25 / no report

60,0 mm	floating cement screed (prefabricated elements HFA), $m' = 150 \text{ g/m}^2$
0,1 mm	separation layer
40,0 mm	impact sound insulation mat Akustik EP1, $s' = 6 \text{ MN/m}^2$ (according to the datasheet)
100,0 mm	fill (paving chippings, grain size 2 mm – 4 mm), bonded with „CONTOPP Gravel Bond“, $m' = 149,6 \text{ kg/m}^2$
0,1 mm	separation layer
180,0 mm	CLT floor, $m' = 77,0 \text{ kg/m}^2$

380,2 mm total thickness

Illustration: none

Product name:

CLT floor with bonded fill (CONTOPP Gravel Bond) and floating cement screed

Manufacturer:

binding agent „CONTOPP Gravel Bond“ KNOPP GmbH

Test date: 29.04.2026

Operator: Gregor Wurlitzer, Elias Uiblein

Installation by: Employees of KNOPP GmbH

Area S of the tested element: $19,8 \text{ m}^2$

Surface-related mass: $379,9 \text{ kg/m}^2$

Temperature in test rooms: $22,0 \text{ °C}$

Relative humidity in test rooms: $42,1 \%$

Static air pressure: 1005 hPa

Volume of the receiving room: $58,9 \text{ m}^3$

Volume of the transmitting room: $60,3 \text{ m}^3$

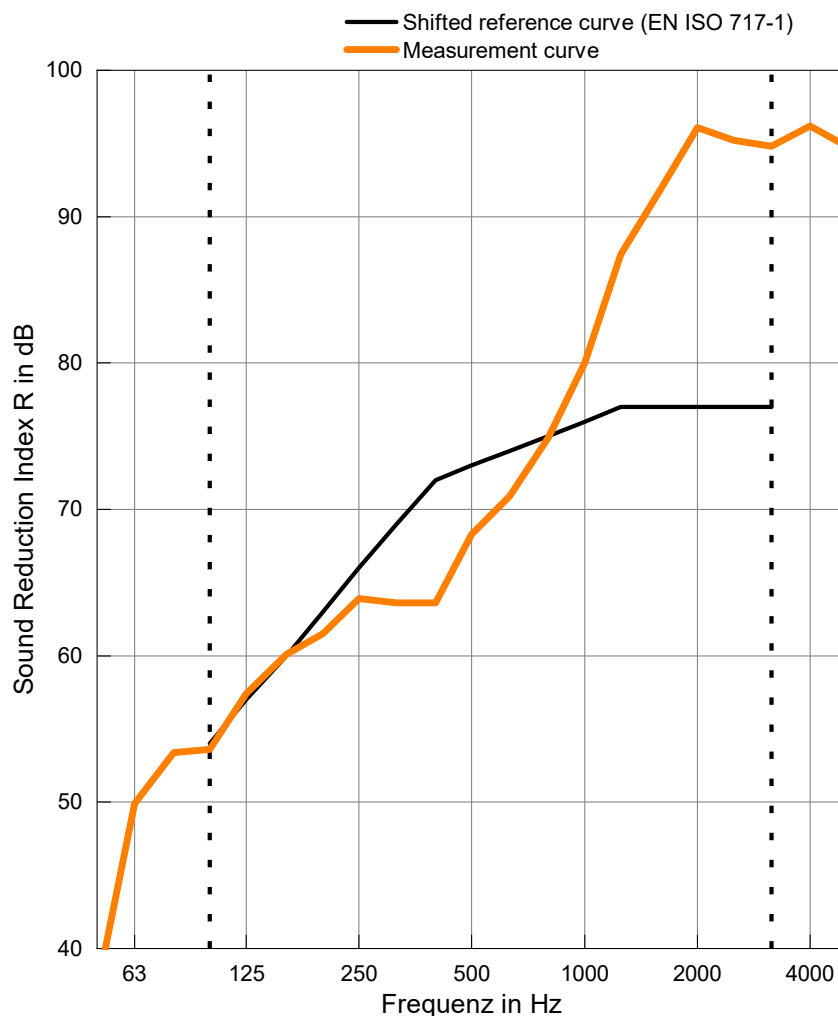
Test sound: white noise (Mode "equalised")

Test code: 260429_SL_M3.0_260429_E_M3.0

Frequency in Hz	R'_{max} in dB	R in dB
50	35,7	$\geq 37,2$
63	49,8	$\geq 49,9$
80	55,2	$\geq 53,4$
100	68,6	$\geq 53,6$
125	76,6	57,4
160	78,9	60,1
200	83,9	61,5
250	90,6	63,9
315	93,3	63,6
400	94,8	63,6
500	99,6	68,3
630	108,4	70,9
800	106,2	74,9
1000	102,5	80,0
1250	104,4	87,4
1600	106,3	$\geq 91,9$
2000	106,3	$\geq 96,1$ *
2500	103,2	$\geq 95,2$ *
3150	101,6	$\geq 94,8$ *
4000	102,0	$\geq 96,2$ *
5000	99,5	$\geq 94,8$ *

$\geq$ in these frequency ranges the real sound reduction index of the test item may be higher due to the small difference to the maximum sound reduction of the test stand ($< 15 \text{ dB}$)

* in these frequency ranges a correction was carried out due to the small difference to the background noise level ($< 6 \text{ dB}$)



Rating in accordance with EN ISO 717-1 (in third-octave bands)

$R_w(C, C_{tr}) = 73 (-1; -5) \text{ dB}$ $C_{50-3150} = -2 \text{ dB}$; $C_{50-5000} = -1 \text{ dB}$; $C_{100-5000} = 0 \text{ dB}$
 $R_w(1/10) = 73,6 \text{ dB}$ $C_{tr,50-3150} = -12 \text{ dB}$; $C_{tr,50-5000} = -12 \text{ dB}$; $C_{tr,100-5000} = -5 \text{ dB}$

Test report number: HFA_20536_26_M3.0_eng

Holzforschung Austria

Date: 10. Juni 2026

Dr. Christian Lux

Processor

This test report was approved electronically in accordance with an internal HFA process by the designated authorized signatory, traceable and documented.

Impact Sound Insulation according to ISO 10140-3

Laboratory measurement of sound insulation of building elements – Measurement of impact sound insulation



Customer:

KNOPP GmbH
Adolf-Oesterheld-Straße 1
DE-997337 Dettelbach

Composition of the test item (from the transmitting to the receiving room):

Details see in contract no. 20536/25 / no report

60,0 mm	floating cement screed (prefabricated elements HFA), $m' = 150 \text{ kg/m}^2$
0,1 mm	separation layer
40,0 mm	impact sound insulation mat Akustik EP1, $s' = 6 \text{ MN/m}^3$ (according to the datasheet)
100,0 mm	fill (paving chippings, grain size 2 mm – 4 mm), bonded with „CONTOPP Gravel Bond“, $m' = 149,6 \text{ kg/m}^2$
0,1 mm	separation layer
180,0 mm	CLT floor, $m' = 77,0 \text{ kg/m}^2$

380,2 mm total thickness

Product name:

CLT floor with bonded filling (CONTOPP Gravel Bond) and floating cement screed

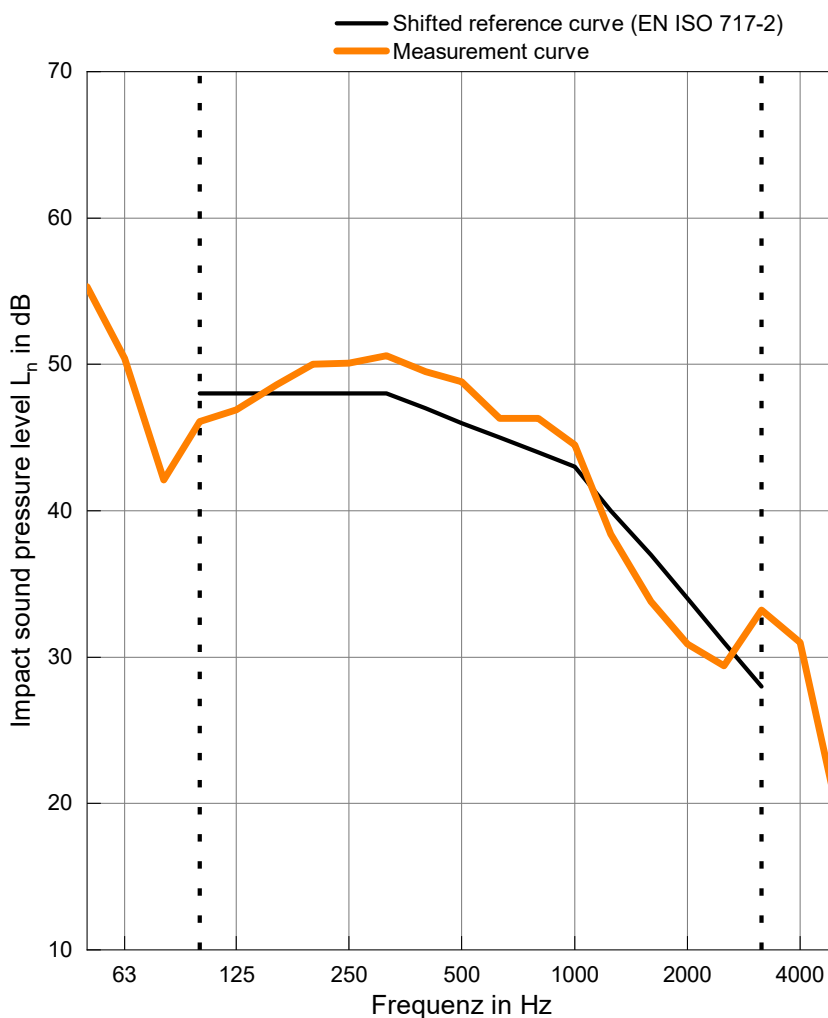
Manufacturer:

binding agent „CONTOPP Gravel Bond“ KNOPP GmbH
Test date: 29.04.2026
Operator: Gregor Wurlitzer, Elias Uiblein
Installation by: Employees of KNOPP GmbH
Area S of the tested element: 19,8 m²
Surface-related mass: 379,9 kg/m²
Temperature in test rooms: 22,0 °C
Relative humidity in the test rooms: 42,1 %
Static air pressure: 1005 hPa
Volume of the receiving room: 58,9 m³
Volume of the transmitting room: 60,3 m³
Test sound: Standardised tapping machine
Test code: DE1.0_M3.1_

Illustration: none

Frequency in Hz	L_n in dB
50	55,3
63	50,4
80	42,1
100	46,1
125	46,9
160	48,6
200	50,0
250	50,1
315	50,6
400	49,5
500	48,8
630	46,3
800	46,3
1000	44,5
1250	38,4
1600	33,8
2000	30,9
2500	29,4
3150	33,2
4000	31,0
5000	19,7

* in these frequency ranges a correction was carried out due to the small difference to the background noise level (< 6 dB)



Rating in accordance with EN ISO 717-2 (in third octave bands)

$L_{n,w}(C_1) = 46 (-61) \text{ dB}$ $C_{1,50-2500} = -61 \text{ dB}$
 $L_{n,w}(1/10) = 45,1 \text{ dB}$

Test report number: HFA_20536_26_M3.1_eng

Holzforschung Austria

Date: 10. Juni 2026

Dr. Christian Lux

Processor

This test report was approved electronically in accordance with an internal HFA process by the designated authorized signatory, traceable and documented.