

Test Report

 Report nº ACL 268/22

 Date of issue: 2022/06/22
Requested by:

 Name: Flexecork

 Address: Rua de Meladas, 260, P.O. Box 1, 4536-902 Mozelos - VFR, Portugal

 Contact: Fax: +351 227 475 301 Tel.: +351 227 475 300 e-mail: inquiry@flexecork.com
Manufacturer and product identification:

 Name*: Flexecork

 Product*: Flexecork 6 mm

 Sampling responsibility*: Customer

 Responsibility of the test specimen installation*: Itecons, by appointment of the customer
Test data:

 Test: **Laboratory measurement of airborne sound transmission loss, TL**

 Date of test: 2022/06/07

 Construction date of test specimen: 2022/06/06

Source room:

Receiving room:

 Average temperature (°C): 22,3

 Average temperature (°C): 20,6

 Average relative humidity (%): 64,2

 Average relative humidity (%): 73,8

 Test method: Test procedure adapted from standards ASTM E90-09; ASTM E2235-04 and ASTM E413-16

 Test site: Itecons, Rua Pedro Hispano s/n; 3030-289 Coimbra

 Operator: Daniela Ferreira
Test specimen description*:

Test specimen with internal reference ACL153A/22 composed by individual laminate floor covering planks (commercial reference of "ARTENS INTENSO") with nominal dimensions of 1327 mm x 194 mm x 12 mm (length x width x thickness), over a resilient layer formed by cork and EVA, with nominal thickness of 6 mm, density of 250 kg/m³ and area density of 985 g/m² (sample with customer reference "5608"), placed on the surface of a reinforced concrete slab with thickness of 140 mm (Itecons heavyweight reference floor) with total area of 3.56 m x 3.56 m, with its perimeter supported on the test rim along the width of 200 mm, under which was suspended a false ceiling composed by a simple metallic structure (profiles spaced 500 mm apart and supported 1000 mm apart with threaded rod M6 and acoustic hangers), an air space of approximately 175 mm (filled with mineral wool 160 mm thick) and two layers of plasterboard (thickness of 15 mm and density of approximately 607 kg/m³, each layer), with joints filled, taped and finished. Sand bags were used for the peripheral insulation of the test specimen.


Test opening description:

The test opening between the acoustic chambers, where the test specimen was installed, has dimensions of 3.16 m x 3.16 m, which corresponds to an area of approximately 10 m².

Test equipment:

Acoustic chambers at Itecons (Source room: cubic shape with approximately 3.75 m edges and multi-layered "Viroc" walls about 50 cm thick; receiving room: parallelepiped shape of 3.92 m x 3.92 m x 4.72 m and double layered reinforced concrete walls with masonry units about 50 cm thick); "Brüel & Kjær" Pulse multianalyser system, PUL02, model 3560-C-T46, with five acquisition channels; "Brüel & Kjær" rotating microphone booms, type 3923, GIR01 and GIR05, with "Brüel & Kjær" 1/2" microphones, type 4190, MIC09 and MIC29, and type 4955, MIC22; acoustic calibrator, type 4231, from "Brüel & Kjær", CLS09; omnidirectional sound source OMNIPOWER 4292, from "Brüel & Kjær", FSO03; omnidirectional sound source OMNIPOWER 4292-L, from "Brüel & Kjær", FSO07; thermo-hygrometer THR09.

Brief description of test procedure:

The test is performed in the laboratory, in accordance with the ASTM E90-09 standard, by the following procedure: measurement of the sound pressure level in the source room, for two source positions and within the sweeping range of a moving microphone; simultaneous sound pressure level measurement in the receiving room, during a microphone rotation and for the same two positions of the emitting source within the source room; measurement of the background noise within the sweeping range of a moving microphone in the receiving room (with the source turned off); evaluation of the reverberation times in the receiving room, considering one source position and five decays measured, at least, at each of the three microphone positions. The sound transmission loss values are determined for a single direction of measurement, in accordance with the ASTM E90-09 standard, at each one-third-octave band. The Sound Transmission Class (STC) is determined in accordance with the standard ASTM E413-16.

Observations:

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The presented results refer exclusively to the tested specimens and apply to the sample as received.

Data reported with * was supplied by the customer, who has the sole responsibility for the accuracy of the information.

Results obtained from the test:
Average sound pressure level in the receiving room produced by the tapping machine (L_{sb}):

Freq. (Hz)	100	125	160	200	250	315	400	500	630
L_{sb} (dB)	42,6	47,7	42,1	45,3	40,7	40,0	34,5	32,4	27,1
Freq. (Hz)	800	1000	1250	1600	2000	2500	3150	4000	5000
L_{sb} (dB)	21,1	22,6	18,6	10,5	5,9	11,0	4,0	4,7	5,2

Average background noise pressure level in the receiving room (L_b):

Freq. (Hz)	100	125	160	200	250	315	400	500	630
L_b (dB)	0,1	4,1	15,5	1,8	5,9	3,3	4,2	4,1	2,2
Freq. (Hz)	800	1000	1250	1600	2000	2500	3150	4000	5000
L_b (dB)	5,2	2,5	0,8	1,6	2,4	10,7	4,0	4,7	5,2

Average sound pressure level in the receiving room after background noise correction (L_s):

Freq. (Hz)	100	125	160	200	250	315	400	500	630
L_s (dB)	42,6	47,7	42,1	45,3	40,7	40,0	34,5	32,4	27,1
Freq. (Hz)	800	1000	1250	1600	2000	2500	3150	4000	5000
L_s (dB)	21,1	22,6	18,6	9,9	3,9	9,0	2,0	2,7	3,2

Average reverberation time in the receiving room (T_r):

Freq. (Hz)	100	125	160	200	250	315	400	500	630
T_r (s)	2,14	2,03	1,65	1,74	1,37	1,15	1,04	1,07	1,02
Freq. (Hz)	800	1000	1250	1600	2000	2500	3150	4000	5000
T_r (s)	1,07	1,09	1,19	1,18	1,16	1,05	1,10	1,07	0,98

ACL269/22

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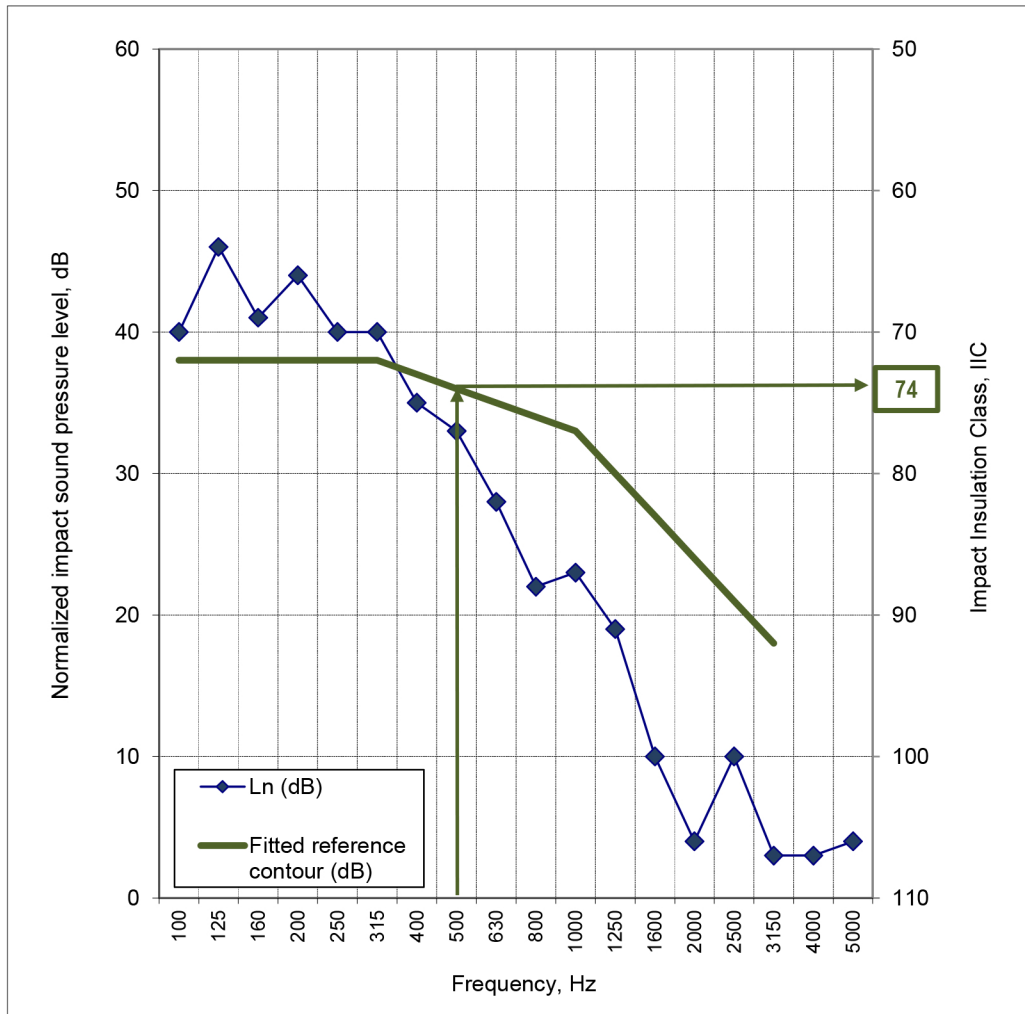
Volume of the rooms (in m³):

 Source room: 52,9

 Receiving room: 75,3
Average normalized impact sound pressure level (L_n):

Freq. (Hz)	100	125	160	200	250	315	400	500	630
L _n (dB)	40	46	41	44	40	40	35	33	28
Freq. (Hz)	800	1000	1250	1600	2000	2500	3150	4000	5000
L _n (dB)	22	23	19	10	≤ 4	≤ 10	≤ 3	≤ 3	≤ 4

The values indicated with "≤" represent measurement limit for which the difference between the sound pressure level in the receiving room, resulting from the normalized tapping machine, and the background noise is less than 5 dB.



IIC = 74 dB (Impact Insulation Class)
 (Result obtained in accordance with the standard ASTM E989-21)

ACL269/22

Report author



Daniela Ferreira
 Senior Official

Technical responsibility



Julieta António
 Technical and Scientific Supervisor

Administration



Validated document

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