Test Report

Report nº ACL 269/22 **Date of issue:** 2022/06/22

Requested by:

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Manufacturer and product identification:

Name*: Flexecork
Product*: Flexecork 6 mm
Sampling responsibility*: Customer
Responsability of the test specimen installation*: Itecons, by appointment of the customer

Test data:

Test: Laboratory measurement of impact sound transmission through floor-ceiling assemblies using the tapping machine, IIC

Date of test:	2022/06/07	**Construction date of test specimen:**	2022/06/06
Source room:		**Receiving room:**	
Temperature (ºC):	22,3 ± 1	**Temperature (ºC):**	20,6 ± 1
Relative humidity (%):	64,2 ± 5	**Relative humidity (%):**	73,8 ± 5
Static pressure (mbar):	1017,2 ± 5	**Static pressure (mbar):**	1018,0 ± 5

Test method: Test procedure adapted from standards ASTM E492-09; ASTM E989-21 and ASTM E2235-04
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 boom, type 3923, GIR05, with "Brüel & Kjær" 1/2" microphones, type 4190, MIC29, and type 4955, MIC22; acoustic calibrator, type 4231, from "Brüel & Kjær", CLS09; impact sound generator, type 3207, from "Brüel & Kjær", MPR02; omnidirectional sound source, type OMNIPOWER 4292, from "Brüel & Kjær", FSO03; thermo-hygrometer THR09; barometer BAR01; thermometer, TER18.

Brief description of test procedure:

The test is performed in the laboratory, in accordance with the standard ASTM E492-09, by the following adapted procedure: installation of the test specimen, in accordance with the manufacturer's specifications, and ensuring minimization of the vibration transmission between the test specimen and the test rooms; measurement of the sound pressure level in the receiving room using a rotating microphone (minimum averaging time of 60 s), with the standard tapping machine activated on the test specimen, in four different positions; measurement of the background noise in the receiving room using the same rotating microphone; measurement of the reverberation time in the receiving room. The normalized impact sound pressure level is determined in accordance with the standard ASTM E492-09, and the impact insulation class, IIC, is determined in accordance with the standard ASTM E989-21.

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.

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Test results:

Average sound pressure level in the source room (L_S):

Freq. (Hz)	80	100	125	160	200	250	315	400	500	
L_S (dB)	87,8	102,0	103,0	103,0	103,1	100,8	100,8	99,8	98,4	
Freq. (Hz)	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**
L_S (dB)	98,1	96,0	95,9	97,0	98,0	97,1	97,0	94,4	93,0	90,2

Average sound pressure level in the receiving room (L_R):

Freq. (Hz)	80	100	125	160	200	250	315	400	500	
L_R (dB)	37,2	47,0	49,7	46,4	48,0	37,8	32,1	27,3	21,2	
Freq. (Hz)	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**
L_R (dB)	16,4	11,7	9,5	11,5	12,7	10,7	9,2	6,9	6,3	5,2

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

Freq. (Hz)	80	100	125	160	200	250	315	400	500	
L_b (dB)	3,2	0,3	4,6	15,5	2,1	5,9	3,2	4,5	4,1	
Freq. (Hz)	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**
L_b (dB)	1,9	5,0	1,8	0,8	1,6	2,4	9,8	4,0	4,7	5,2

Average sound pressure level in the receiving room after background noise correction (L'_R):

Freq. (Hz)	80	100	125	160	200	250	315	400	500	
L'_R (dB)	37,2	47,0	49,7	46,4	48,0	37,8	32,1	27,3	21,2	
Freq. (Hz)	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**
L'_R (dB)	16,4	10,6	8,7	11,5	12,7	10,0	7,2	4,9	4,3	3,2

Average receiving room sound absorption (A_R):

Freq. (Hz)	80	100	125	160	200	250	315	400	500	
A_R (m^2)	4,6	6,5	6,0	7,0	7,0	9,0	10,2	11,2	10,7	
Freq. (Hz)	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**
A_R (m^2)	11,9	10,9	10,6	10,4	10,3	10,5	11,3	10,7	11,1	12,4

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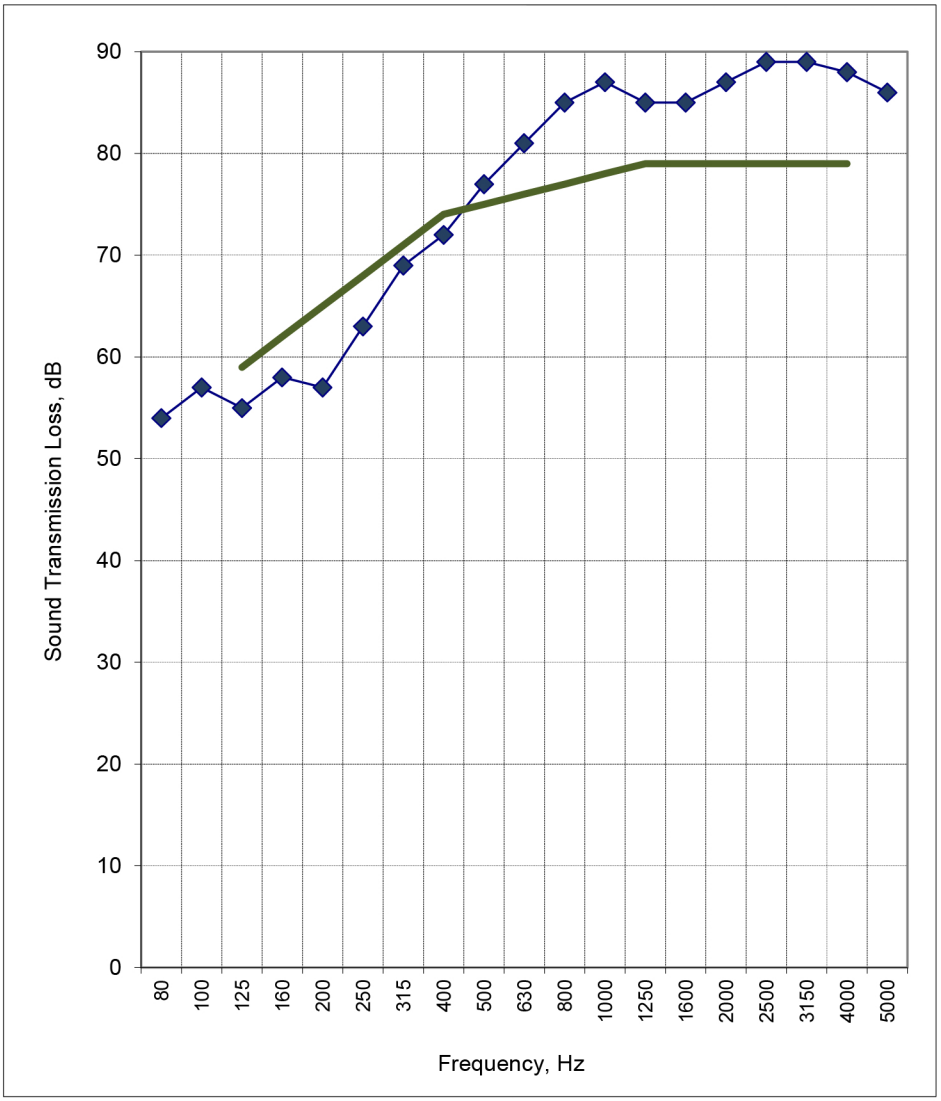
Volume of the rooms (in m^3): Source room: 52,9 Receiving room: 75,3

Sound Transmission Loss (TL):

Freq. (Hz)	80	100	125	160	200	250	315	400	500	
TL (dB)	54	57	55	58	57	63	69	72	77	
Freq. (Hz)	**630**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**
TL (dB)	81	85	87	85	85	87	≥ 89	≥ 89	≥ 88	≥ 86

The values indicated with "≥" represent the measurement limit for which the difference between the sound pressure level in the receiving room and the background noise is less than 5 dB.



STC Rating = **75** (Sound Transmission Class)

Deficiencies = **25** (Sum of the deficiencies versus contour curve)

Report author	Technical responsability	Administration
Daniela Ferreira Senior Official	Julieta António Technical and Scientific Supervisor	Validated document

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