ACOUSTICS AND BUILDING PHYSICS
NOISE CONTROL
ENVIRONMENTAL TECHNOLOGY
FIRE SAFETY

PEUTZ

Report

Laboratory for Acoustics

Determination of the room-to-room airborne and impact sound insulation of a
Soluflex Cablefloor made by Van Geel Legrand B.V.

Report number A 1038-2E dd. 23 August 2007

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ISO-9001: 2000 certified

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1. INTRODUCTION

Ordered by Van Geel Legrand BV at Boxtel (The Netherlands) measurements have been carried out in order to determine the room-to-room airborne and impact sound insulation of a

Soluflex Cablefloor made by Van Geel Legrand B.V.

The measurements have been carried out in the Laboratory for Acoustics of "Adviesbureau Peutz & Associés B.V" at Mook (Netherlands), see figure 1.

Compared with the version published on 18 February 2002, this test report is modified on the following issues:

- the name of principal.

2. NORMS AND GUIDELINES

The measurements have been carried out according to the Quality Manual of the Laboratory for Acoustics and:

ISO 140-12:1998	Acoustics - Measurement of sound insulation in buildings and of building elements - Part 12: Laboratory measurement of room-to-room airborne and impact sound insulation of an access floor
Note:	*This international norm is accepted by all members of the European Union as European Norm EN ISO 140-12:2000*

Other related norms:

ISO 140-1:1997	Acoustics - Measurement of sound insulation in buildings and of building elements - Part 1: Requirements for laboratory test facilities with suppressed flanking transmission
Note:	*This international norm is accepted by all members of the European Union as European Norm EN ISO 140-1:1997*
ISO 140-2:1991	Acoustics - Measurement of sound insulation in buildings and of building elements - Part 2: Determination, verification and application of precision data
Note:	*This international norm is accepted by all members of the European Union as European Norm EN 20140-2:1993*
ISO 717-1:1996	Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation
Note:	*This international norm is accepted by all members of the European Union as European Norm EN ISO 717-1:1996*
ISO 717-2:1996	Acoustics - Rating of sound insulation in buildings and of building elements - Part 2: Impact sound insulation
Note:	*This international norm is accepted by all members of the European Union as European Norm EN ISO 717-2:1996*

3. TESTED CONSTRUCTIONS

The following data have been provided by the principal, supplemented by observations in the laboratory where applicable.

Tests have been conducted on a raised floor construction composed of floorsupports with metal floortiles on top of them. See also figure 4 and 5.

- The metal floortiles made by Van Geel Legrand B.V., type Soluflex are made of 2 mm thick galvanised steelplate with folded edges, thus forming a tile of 225 x 225 mm, 12.5 mm high. The mass of the tiles is about 20 kg/m^2
- the floorsupports made by Van Geel Legrand B.V., type H60 are made of PP moulded plastics; are 60 mm high and have a 100 x 100 mm tabletop
- The folded edges of the floortile fit into grooves made in the tabletop of the floorsupports
- Carpettiles 500 x 500 mm were applied in one of the tests. This carpet is of type **Aetis 33622** and is **manufactured by ESCO**

At the junction between the tested cablefloor and the partition a sound barrier has been erected in the plenum under the floor. Two types of barriers have been tested:

- foam-blocks with closed cells; these blocks fit exactly in the gap beneath the tiles; see figure 6a
- mineral wool cut to a width of 200 mm; compressed around the floorsupports; see figure 6b

The following tests have been conducted:

1. the bare cablefloor according to the description above
2. same raised floor with a foam barrier
3. same raised floor with a mineralwool barrier
4. the cablefloor covered with carpettiles, no barrier
5. the cablefloor covered with carpettiles, foam barrier
6. the cablefloor covered with carpettiles, mineralwool barrier

4. ROOM-TO-ROOM AIRBORNE SOUND INSULATION

4.1. Method

The floor to be tested is mounted as one non-interrupted raised floor in two horizontally adjacent testing rooms; the airgap under the raised floor being 58 mm. The testing rooms comply with ISO 140-12. The measuring set-up is shown in figure 2 and 3. According to the standard one sidewall and both end-walls of the plenum space under the floor are lined with a sound absorbing material in order to model an infinite plenum.

The partition wall between the two rooms is 550 mm thick. The junction of this wall to the floor under test is shown in figure 3. The maximum sound insulation that can be measured between the two rooms is determined by the sound insulation of the partition wall and the sound transmitted by the flanking walls. This maximum sound insulation is R_w = 68 dB (ISO 140-3).

In one of the rooms (the source room), broadband is generated by loudspeakers. In this source room as well as in the adjacent room (the receiving room) the resulting sound pressure level is measured by means of a microphone mounted on a continuously rotating boom, so the (time- and space-) averaged sound pressure level is determined. In the receiving room, the reverberation time is also determined.

According to the requirements of the norm, the test procedure is repeated reversing the source and receiving rooms. The reported value of the sound insulation is the arithmetic average of the two results.

4.2. Calculations

The calculations as well as the measurements have been conducted in 1/3 octave bandwidth from 100 to 5000 Hz., according to the norm. Where applicable octave-band values have been calculated from the 1/3 octave-band values.

The room-to-room sound insulation of a raised floor is defined as the "normalized flanking level difference $D_{n,f}$" to be determined as follows:

$$D_{n,f} = L_1 - L_2 - 10 \cdot \lg\left(\frac{A}{A_0}\right) \qquad (6)$$

In which:
- L_1 = the sound pressure level in the source room
- L_2 = the sound pressure level in the receiving room
- A = the absorption in the receiving room, evaluated from the reverberation times of that room
- A_o = reference absorption area of 10 m^2.

4.3. Accuracy of the measurements

The accuracy of the sound insulation, as calculated, can be expressed in terms of repeatability (tests within one laboratory) and reproducibility (between various laboratories).

4.3.1. Repeatability r

When: - two tests are performed on identical test material - within a short period of time - by the same person or team - using the same instrumentation - under unchanged environmental conditions - the probability will be 95% that the difference between the two test results will be less than or equal to r.

In order to evaluate the repeatability r for the room-to-room sound insulation measurements performed in the Laboratory for Acoustics, a series of measurements have been carried out according to ISO 140-2. From the results of those measurements, the repeatability r has been calculated. It was found that for the frequency range from 100 to 250 Hz, the repeatability r is 2.0 dB maximum. For the frequency range 315 to 3150 Hz, the repeatability r is 1.3 dB maximum.

The repeatability r regarding the single-figure rating $D_{n,f,w}$ (ISO 717-1) is 0.7 dB maximum. As ISO 717-1 prescribes rounding of the $D_{n,f,w}$-values to the nearest dB, a repeatability r of 1 dB is applicable for the $D_{n,f,w}$-value. From these results it may be concluded that the repeatability r, as found, satisfies the demands of ISO 140-2.

4.3.2. Reproducibility R

When: - two tests are performed on identical test material - in different laboratories - by different person(s) - under different environmental conditions - the probability will be 95% that the difference between the two test results will be less than or equal to R

In ISO 140-2 there is a statement on the reproducibility R to be expected, based on the results of various inter-laboratory tests. The reproducibility of the single figure rating $D_{n,f,w}$ is about 3 dB.

4.4. Environmental conditions during the tests

room number	temperature [°C]	relative humidity [%]
(4)	18	64
(5)	17	63

4.5. Results

The results of the measurements have been stated in the Tables I (bare floor) and II (covered floor) as well as in figures 7 to 12.

Table I: bare cablefloor

barrier	normalized flanking level difference $D_{n,f}$ [dB]					
	none		foam		mineral wool	
figure	7		8		9	
Frequency [Hz]	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
100	25.5		35.2		36.2	
125	23.4	23.5	33.9	34.7	33.2	33.5
160	22.2		35.1		32.1	
200	18.8		33.8		32.1	
250	21.0	21.1	38.1	37.0	35.7	35.1
315	26.3		46.0		44.6	
400	32.5		51.3		50.2	
500	37.2	35.8	51.9	52.7	52.6	52.4
630	43.9		56.2		56.6	
800	44.1		59.1		59.5	
1000	39.2	42.3	60.1	60.7	60.7	61.0
1250	48.0		64.7		63.9	
1600	47.1		64.6		64.6	
2000	50.1	48.6	62.7	61.4	63.4	62.3
2500	49.3		58.9		60.2	
3150	46.9		58.2		58.7	
4000	44.7	45.7	55.2	55.8	54.5	55.7
5000	45.9		54.8		54.9	
$D_{n,f,w}(C;C_{tr})$	37(-2;-7) dB		53(-3;-8) dB		51(-3;-7) dB	

Table II: cablefloor covered with carpettiles

barrier	normalized flanking level difference $D_{n,f}$ [dB]					
	none		foam		mineral wool	
figure	10		11		12	
Frequency [Hz]	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
100	34.7		40.6		41.2	
125	30.1	30.0	38.8	39.1	39.0	39.0
160	27.7		38.2		37.5	
200	30.3		42.7		41.7	
250	35.0	33.6	50.0	46.4	49.2	45.6
315	41.5		53.6		54.3	
400	46.3		56.9		57.8	
500	52.0	49.7	59.0	58.4	59.4	59.0
630	56.2		59.9		60.1	
800	54.0		62.4		62.8	
1000	51.8	53.6	64.6	64.1	64.7	64.2
1250	56.0		66.2		65.6	
1600	57.6		66.5		66.6	
2000	62.2	60.2	66.9	65.9	66.9	66.0
2500	62.7		64.6		64.9	
3150	64.2		65.7		66.3	
4000	67.8	66.7	67.7	67.1	67.7	67.5
5000	70.0		68.3		68.9	
$D_{n,f,w}(C;C_{tr})$	48(-2;-7) dB		60(-4;-8) dB		60(-4;-9) dB	

In the tables as well as in the figures 7 to 12 the normalized flanking level difference is stated in 1/3 octave frequencybands. From those values the octave-band levels have been calculated as well as the weighted normalized flanking level difference $D_{n,f,w}$ with adaptation terms C and C_{tr} according to ISO 717-2

The measurements took place under laboratory conditions. If in practice those conditions are not met, different results may be expected.

5. ROOM-TO-ROOM IMPACT SOUND INSULATION

5.1. Method

By means of an "impact sound generator" as defined in ISO 140-8 Annex A (also called "tapping machine") the impact sound is generated. This tapping machine has five steel hammers which continuously and in turn fall on the floor in such a way that the floor is excited with a frequency of 10 strokes per second. The impact sound generator's mass is about 12 kg and it is supported by three points resting on the floor under test.

The tapping machine is positioned at 6 or more different positions on the floor of one of the two rooms (the sending room).

In the other room (receiving room) the resulting sound pressure level is measured by means of a microphone on a continuously rotating boom, so the (time- and space-) averaged sound pressure level in this room is determined. The reverberation time of the receiving room is also measured.

5.2. Calculations

The measurements as well as the calculations are made with a 1/3-octave bandwidth from 100 to 5000 Hz. Where applicable octave-band values are calculated from those 1/3-octave bands.

From the reverberation measurements the equivalent sound absorption A (per frequency-band) is determined (and expressed in m^2) according to the next equation:

$$A = \frac{0.16 \cdot V}{T} \qquad (1)$$

in which:

- A = the equivalent sound absorption [m^2]
- V = the volume of the receiving room [m^3]
- T = the reverberation time in the receiving room [s]

Subsequently the normalized flanking impact sound pressure level $L_{n,f}$ is calculated according to:

$$L_{n,f} = L_i + 10 \lg\left(\frac{A}{A_0}\right) \qquad (2)$$

in which:

- $L_{n,f}$ = the normalized flanking impact sound pressure level [dB]
- L_f = the average sound pressure level in the receiving room [dB]
- A = the equivalent sound absorption of the receiving room [m^2]
- A_0 = the reference sound absorption (= 10 m^2)

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5.3. Accuracy

The accuracy of the results may be expressed in terms of repeatability (within one laboratory) and the reproducibility (between different laboratories)

5.3.1. Repeatability r

When: - two tests are performed on identical test material - within a short period of time - by the same person or team - using the same instrumentation - under unchanged environmental conditions - the probability will be 95% that the difference between the two test results will be less than or equal to r.

In order to determine the repeatability of this type of measurements carried out at adviesbureau Peutz a series of measurements were made according to ISO 140-2. From the results it can be concluded that the repeatability r is 1.9 dB (maximum) for the frequency-bands 100 to 250 Hz and 1.0 dB (maximum) for the frequencybands 315 to 3150 Hz.

De repeatability regarding the single number rating $L_{n,f,w}$ is 0.3 dB (maximum), after rounding to an integer dB (as demanded by ISO 717) a repeatability of ±1 dB may be assumed.

From those results it is clear that the repeatability is in agreement with the demands of ISO 140-2.

5.3.2. Reproducibility R

When: - two tests are performed on identical test material - in different laboratories – by different person(s) - under different environmental conditions - the probability will be 95% that the difference between the two test results will be less than or equal to R

Based on various series of measurements ISO 140-2 points out what level of reproducibility may be expected. The reproducibility R of the single number rating $L_{n,f,w}$ will be about 2 dB.

5.4. Environmental conditions during the tests

room number	temperature [°C]	relative humidity [%]
(4)	18	64
(5)	17	63

5.5. Results

The results of the measurements have been stated in the Tables III (bare floor) and IV (covered floor) as well as in figures 13 to 18.

Table III: bare cablefloor

Barrier figure	normalized flanking impact sound pressure level $L_{n,f}$ [dB]					
	none 13		foam 14		mineral wool 15	
Frequency [Hz]	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
100	58.8		46.3		47.7	
125	57.9	63.4	50.3	55.3	49.9	56.0
160	59.2		52.7		53.9	
200	64.6		58.8		57.7	
250	65.5	69.3	59.4	64.0	60.1	63.6
315	63.1		59.5		58.2	
400	61.2		58.5		57.8	
500	62.4	65.4	58.7	62.0	57.9	61.4
630	56.0		51.3		51.7	
800	52.4		46.4		46.6	
1000	57.1	59.2	43.6	48.9	43.1	48.8
1250	51.5		40.1		39.7	
1600	51.4		41.3		41.5	
2000	49.4	54.6	41.8	45.3	43.3	46.3
2500	48.1		37.2		38.4	
3150	48.6		36.6		38.0	
4000	48.0	52.2	37.8	43.6	37.3	43.6
5000	45.0		40.9		40.5	
$L_{n,f,w}(C_I)$	59(-2) dB		53(-1) dB		53(-2) dB	

Table IV: cablefloor with carpettiles

Barrier figure	normalized flanking impact sound pressure level $L_{n,f}$ [dB]					
	none 16		foam 17		mineral wool 18	
Frequency [Hz]	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.	1/3 oct.	1/1 oct.
100	59.2		46.1		46.7	
125	56.3	62.7	45.9	50.4	47.1	52.5
160	57.7		44.8		49.0	
200	58.0		45.8		48.6	
250	53.8	59.6	41.6	47.8	43.8	50.3
315	46.9		38.6		40.6	
400	41.0		33.2		36.0	
500	38.8	43.3	29.0	34.7	32.0	37.8
630	31.5		19.0		26.1	
800	29.2		15.5		21.0	
1000	31.7	34.2	13.3	18.2	17.7	23.2
1250	25.1		9.5		13.6	
1600	21.6		6.6		11.1	
2000	17.9	23.7	3.9	9.7	6.5	13.3
2500	14.5		3.5		5.9	
3150	9.2		5.4		8.0	
4000	6.8	12.3	7.5	11.9	9.4	13.9
5000	6.0		8.1		9.7	
$L_{n,f,w}(C_I)$	49(1) dB		37(0) dB		39(1) dB	

In the tables as well as in the figures 13 to 18 the normalized flanking impact sound pressure level is stated in 1/3 octave frequencybands. From those values the octave-band levels have been calculated as well as the "weighted normalized flanking impact sound pressure level $L_{n,f,w}$" with adaptation terms C_I according to ISO 717-2

The measurements took place under laboratory conditions. If in practice those conditions are not met, different results may be expected.

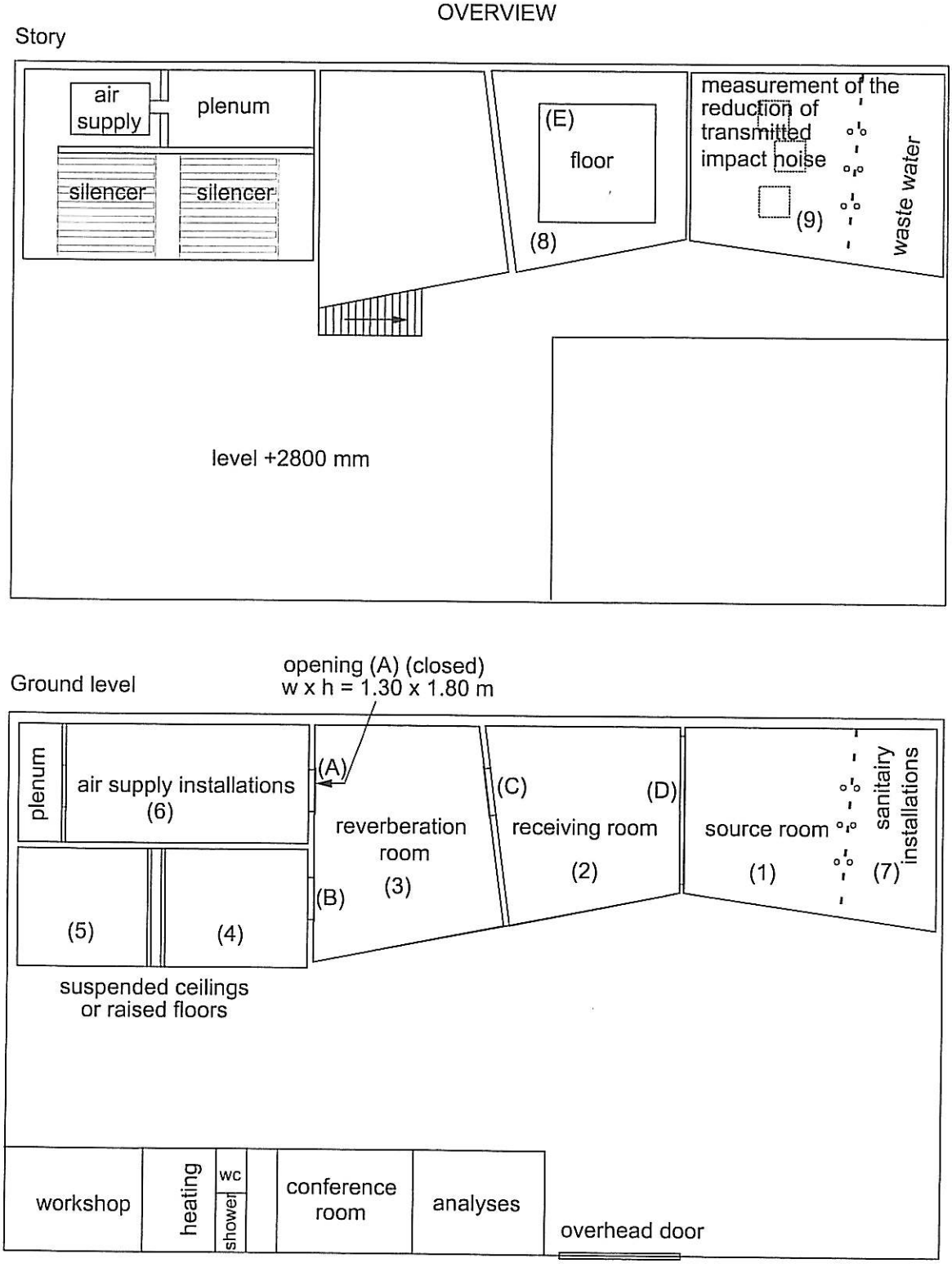
Th. Scheers
Leader of the Laboratory

Mook,
ir. M.L.S Vercammen
manager

This report contains:
13 pages
18 figures

ADVIESBUREAU PEUTZ & ASSOCIES B.V.
Lindenlaan 41, NL-6584 AC MOLENHOEK (LB), NETHRLANDS

OVERVIEW



TEST OPENINGS (w x h in mm)
(B) 1000 x 2200
(C) 1500 x 1250
(D) 4300 x 2800
(E) 4000 x 4000

0 1 2 3 4 5 m
scale

ADVIESBUREAU PEUTZ & ASSOCIES B.V.
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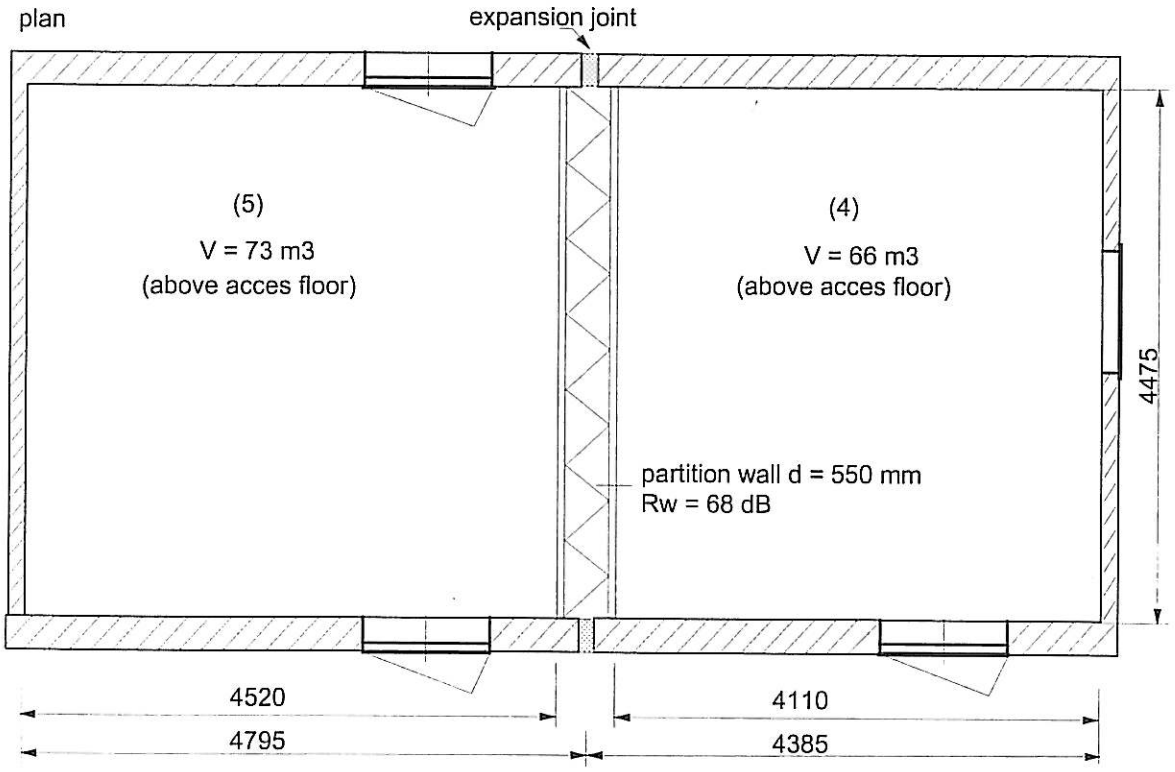

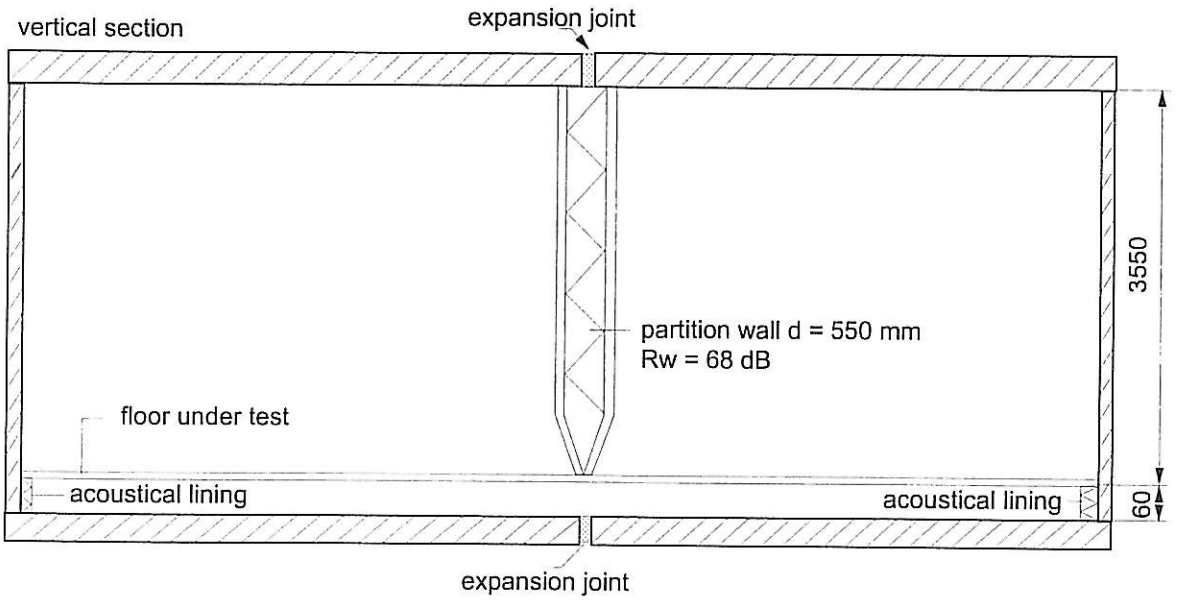

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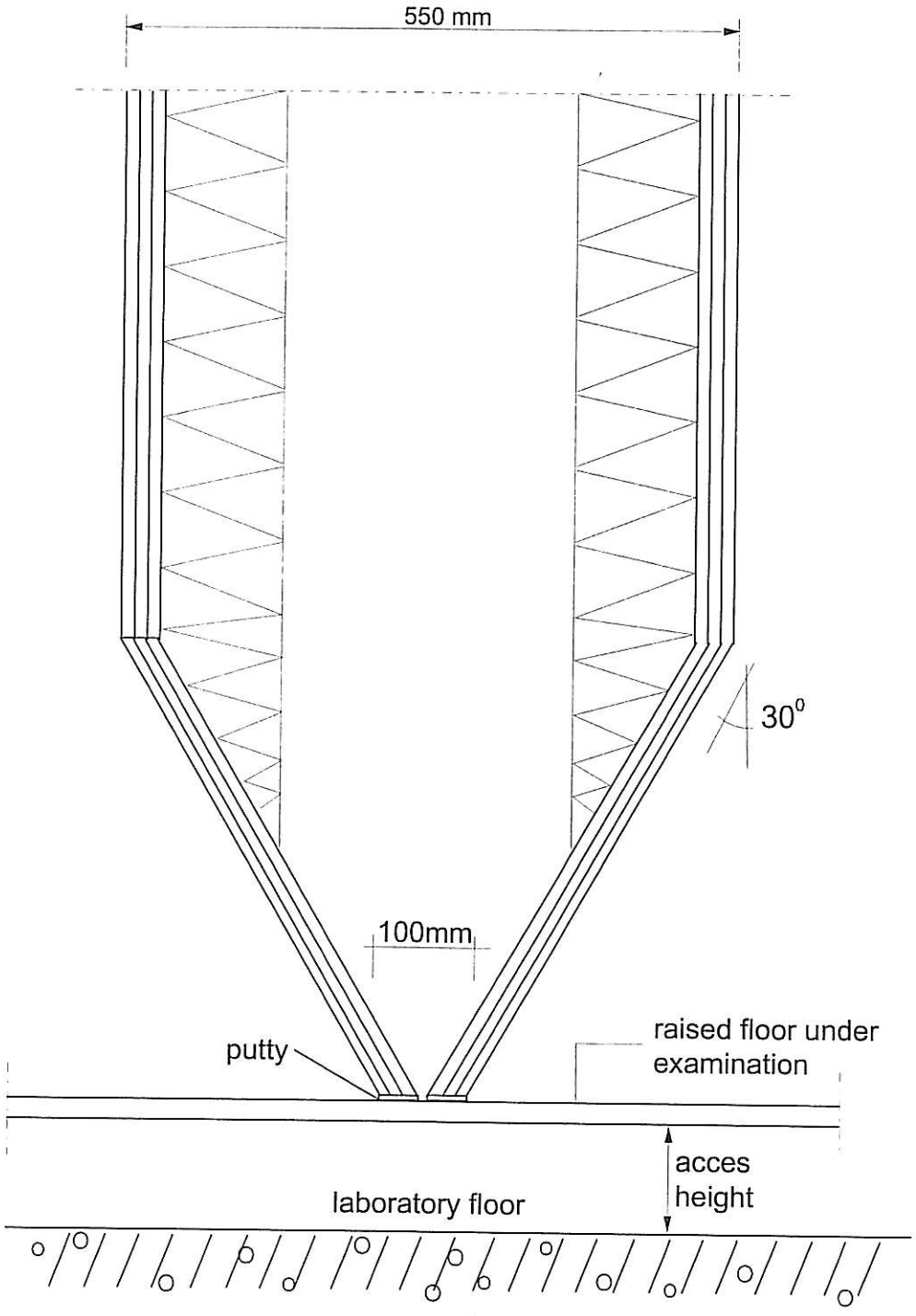

figure 3

USED PARTS

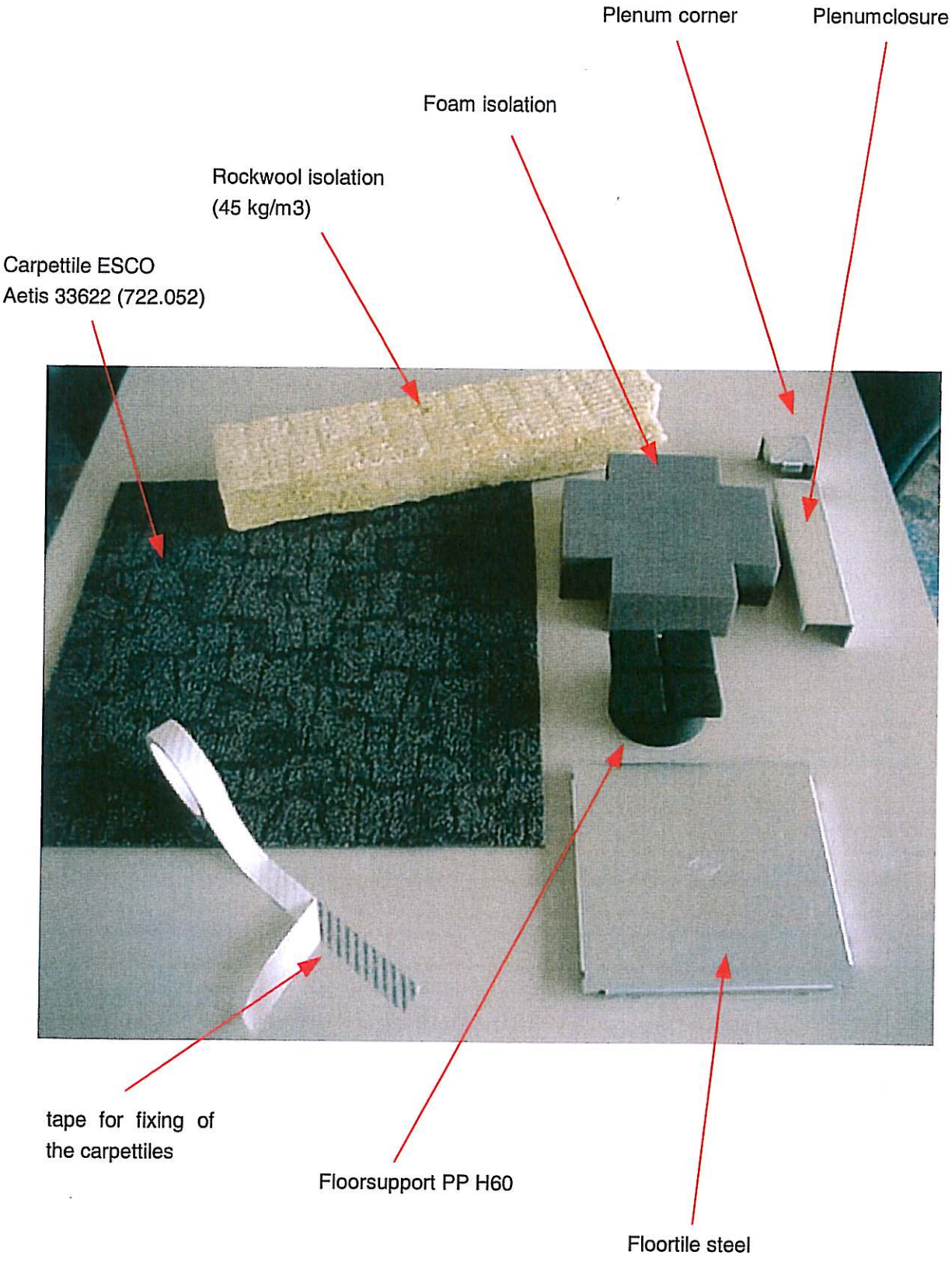
Plenum corner
Plenumclosure
Foam isolation
Rockwool isolation
(45 kg/m3)
Carpettile ESCO
Aetis 33622 (722.052)
tape for fixing of
the carpettiles
Floorsupport PP H60
Floortile steel

figure 5a: floor under construction

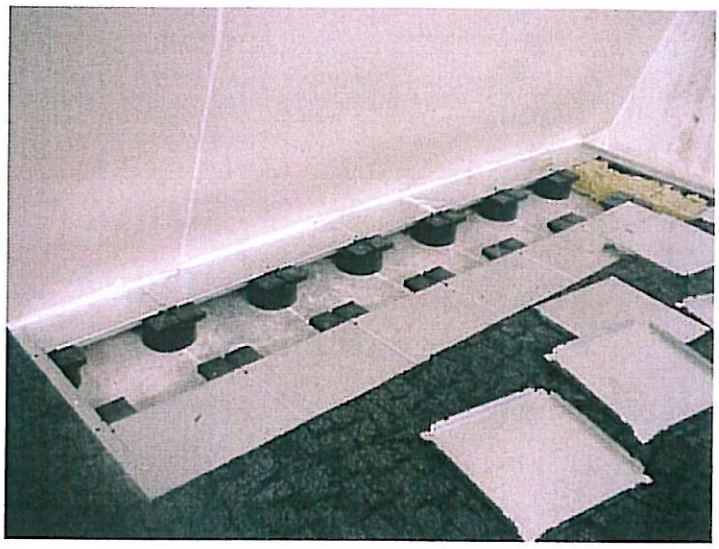

figure 5b raised floor tile

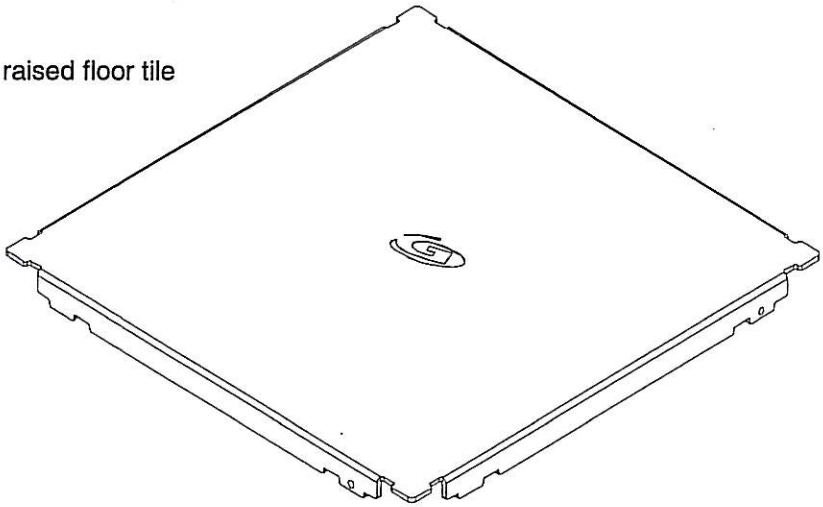

figure 5c floorstand

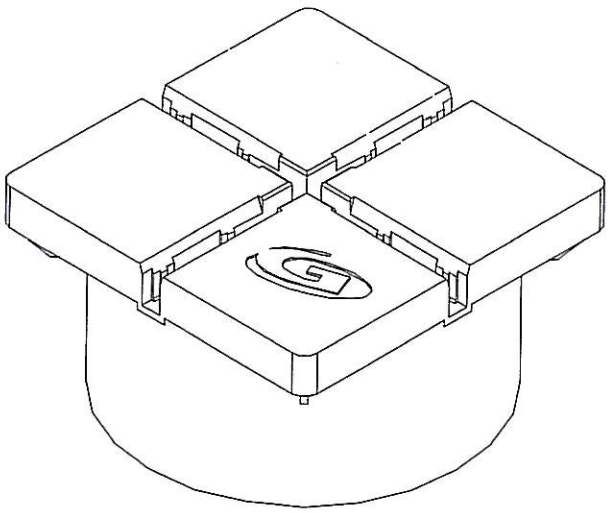

figure 6a: application of the foam barrier as an example

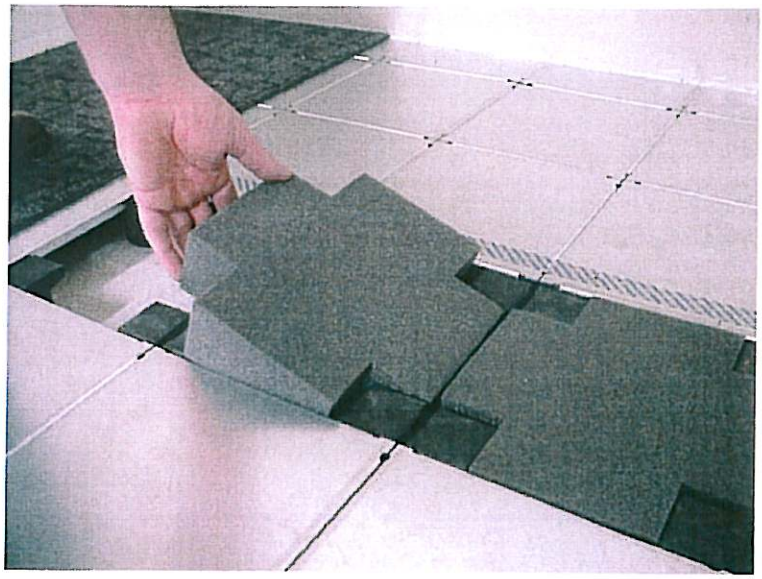

figure 6b: application of the rockwool barrier as an example

LABORATORY FOR ACOUSTICS

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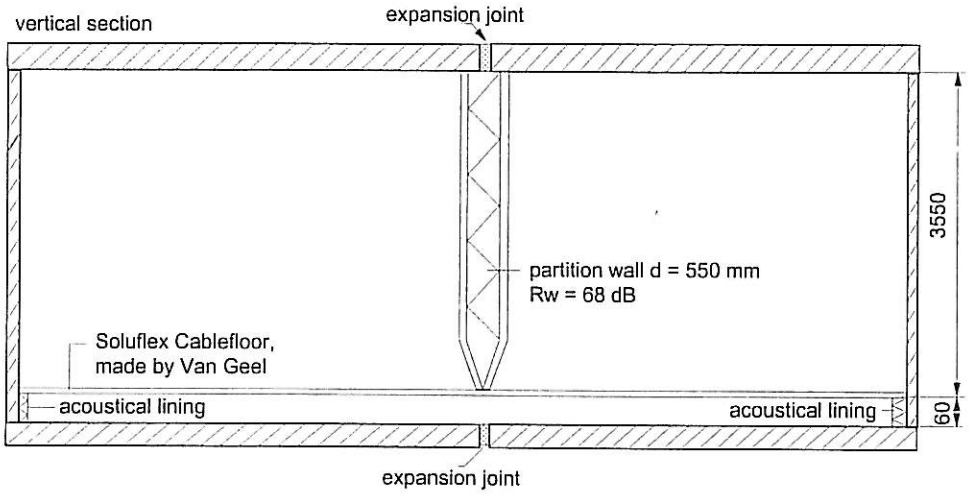
THE ROOM-TO-ROOM AIRBORNE SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume sending room: 73 m^3

volume receiving room: 66 m^3

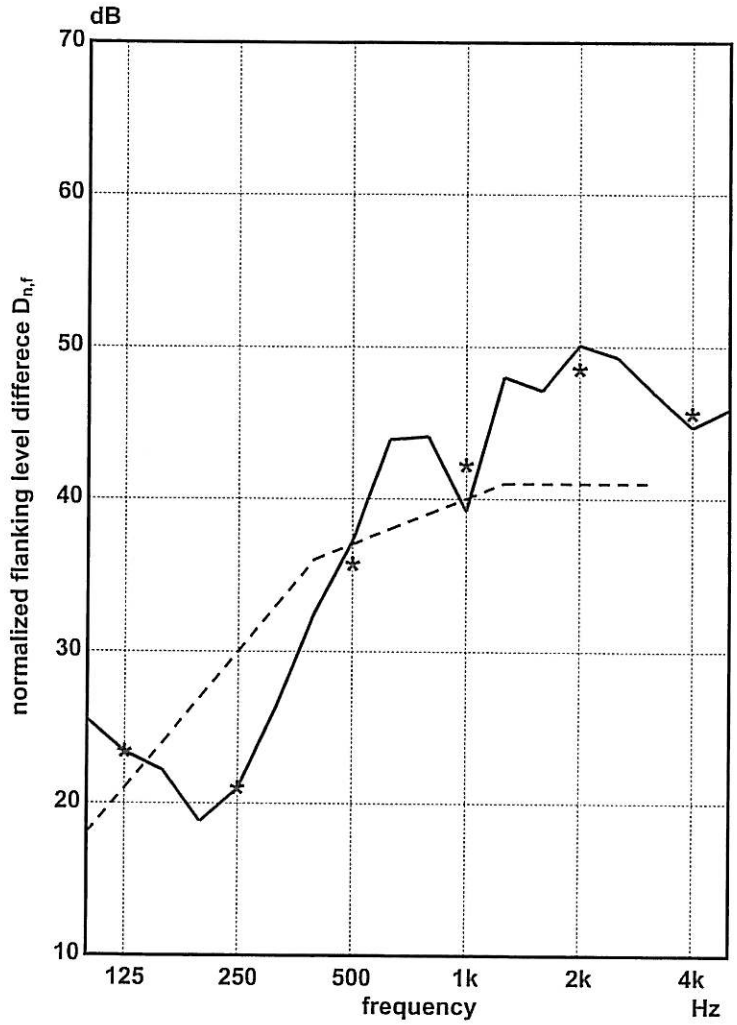
reference area: 10 m^2

measured at: laboratory conditions

signal: broad-band noise

bandwidth: 1/3 octave

ISO 717-1:1996
$D_{n,f,w}(C;C_{tr})$ = 37(-2;-7) dB



	25.5	18.8	32.5	44.1	47.1	46.9
1/3 oct.	23.4	21.0	37.2	39.2	50.1	44.7 dB
	22.2	26.3	43.9	48.0	49.3	45.9
1/1 oct.	23.5	21.1	35.8	42.3	48.6	45.7 dB

* 1/1 oct.
——— 1/3 oct.
- - - - ref. curve (ISO 717)

publication is permitted for the entire page only

Mook, 11-04-2001

report nr. A1038-2E

figure 7

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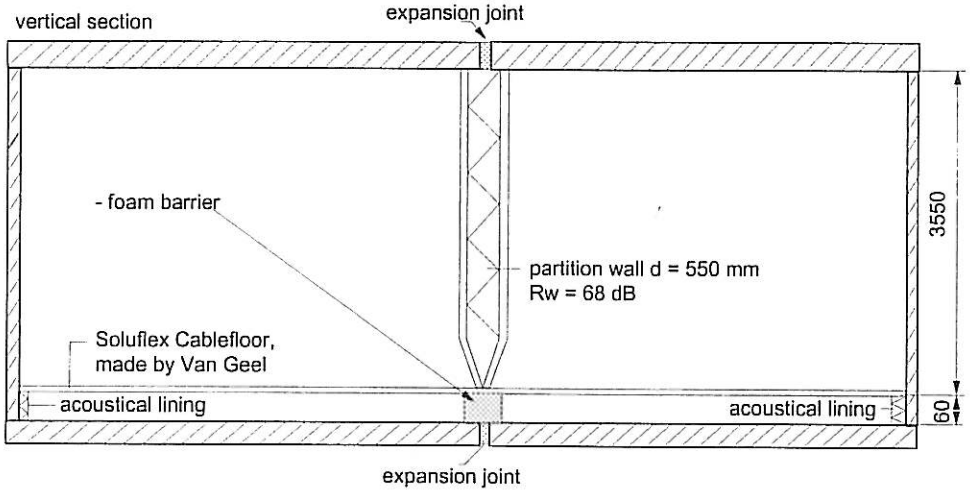
THE ROOM-TO-ROOM AIRBORNE SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume sending room: 73 m^3

volume receiving room: 66 m^3

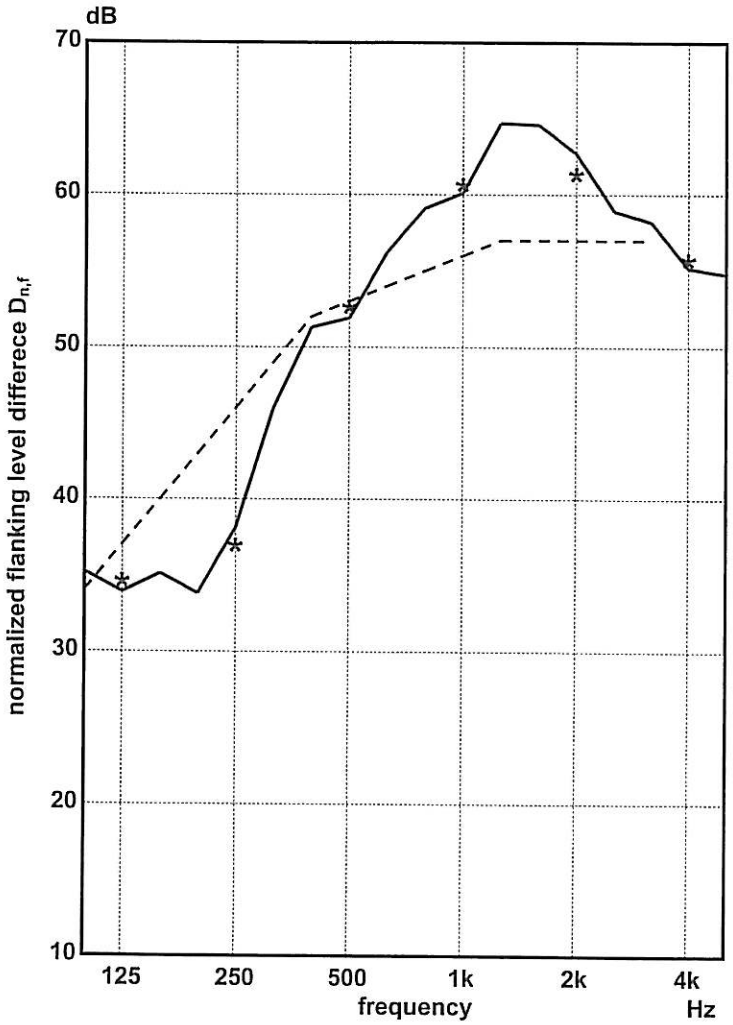
reference area: 10 m^2

measured at: laboratory conditions

signal: broad-band noise

bandwidth: 1/3 octave

ISO 717-1:1996
$D_{n,f,w}(C;C_{tr})$ = 53(-3;-8) dB



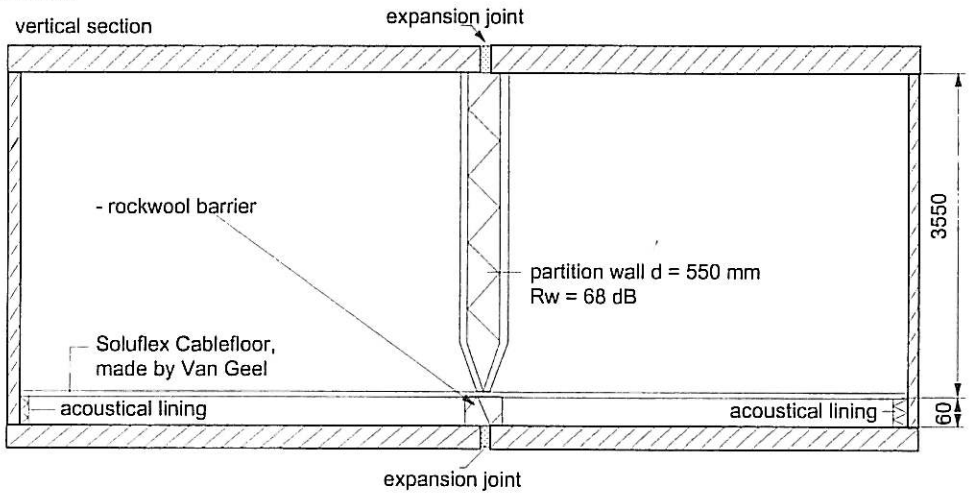
	35.2	33.8	51.3	59.1	64.6	58.2
1/3 oct.	33.9	38.1	51.9	60.1	62.7	55.2 dB
	35.1	46.0	56.2	64.7	58.9	54.8
1/1 oct.	34.7	37.0	52.7	60.7	61.4	55.8 dB

* 1/1 oct.
——— 1/3 oct.
- - - - ref. curve (ISO 717)

Mook, 11-04-2001

THE ROOM-TO-ROOM AIRBORNE SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume sending room: 73 m^3

volume receiving room: 66 m^3

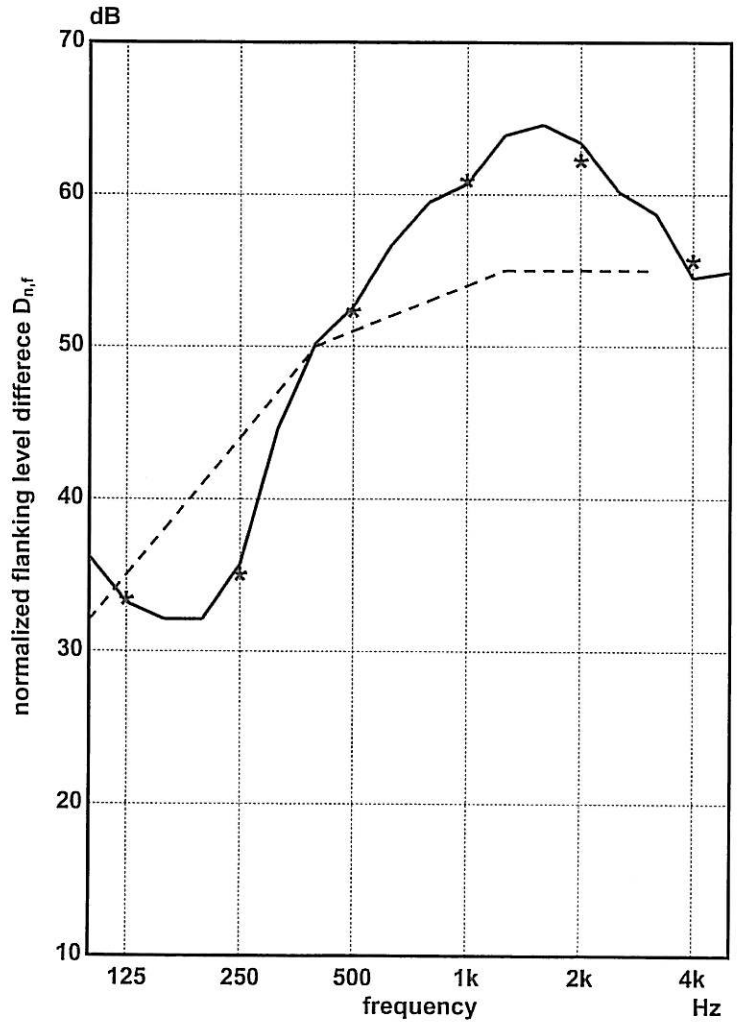
reference area: 10 m^2

measured at: laboratory conditions

signal: broad-band noise

bandwidth: 1/3 octave

ISO 717-1:1996
$D_{n,f,w}(C;C_{tr})$ = 51(-3;-7) dB



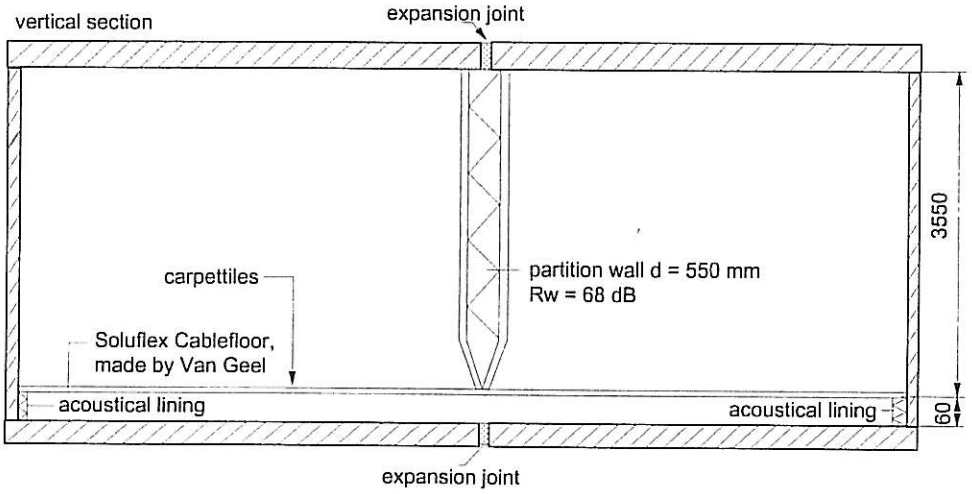
	36.2	32.1	50.2	59.5	64.6	58.7
1/3 oct.	33.2	35.7	52.6	60.7	63.4	54.5 dB
	32.1	44.6	56.6	63.9	60.2	54.9
1/1 oct.	33.5	35.1	52.4	61.0	62.3	55.7 dB

* 1/1 oct.
——— 1/3 oct.
- - - - ref. curve (ISO 717)

Mook, 13-04-2001

THE ROOM-TO-ROOM AIRBORNE SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume sending room: 73 m^3

volume receiving room: 66 m^3

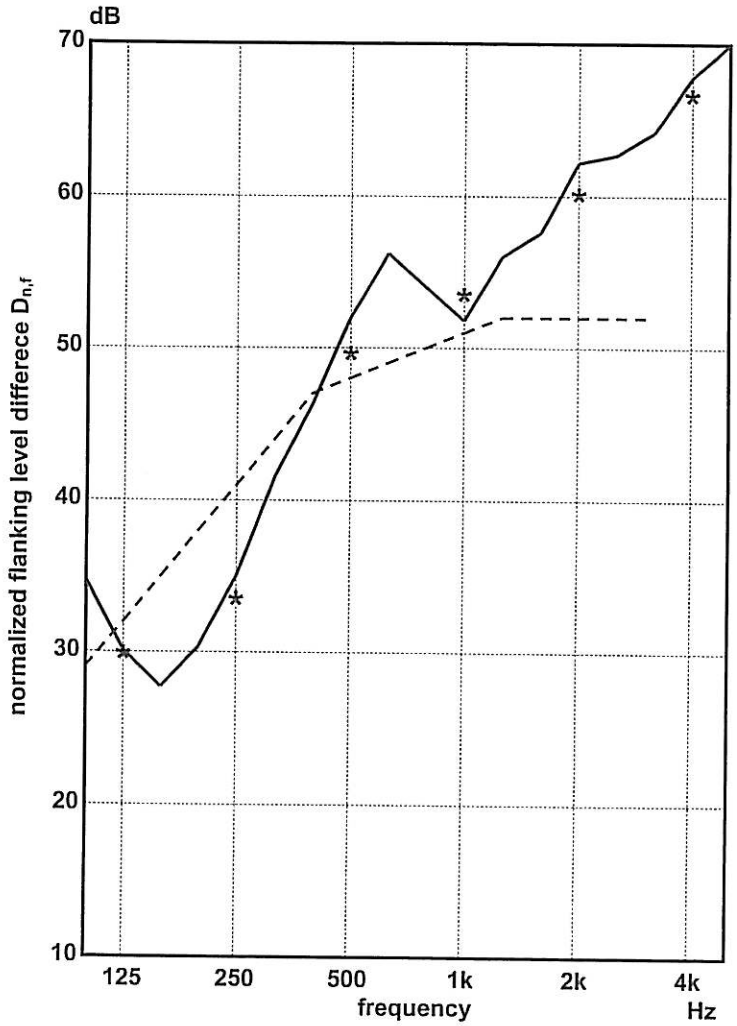
reference area: 10 m^2

measured at: laboratory conditions

signal: broad-band noise

bandwidth: 1/3 octave

ISO 717-1:1996
$D_{n,f,w}(C;C_{tr})$ = 48(-2;-7) dB



	34.7	30.3	46.3	54.0	57.6	64.2
1/3 oct.	30.1	35.0	52.0	51.8	62.2	67.8 dB
	27.7	41.5	56.2	56.0	62.7	70.0
1/1 oct.	30.0	33.6	49.7	53.6	60.2	66.7 dB

* 1/1 oct.
——— 1/3 oct.
- - - - ref. curve (ISO 717)

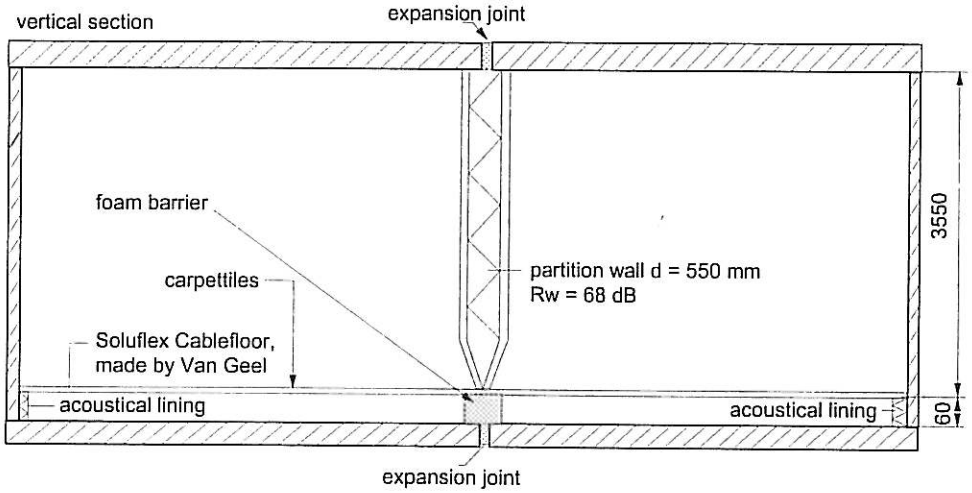
Mook, 13-04-2001

LABORATORY FOR ACOUSTICS

PEUTZ

THE ROOM-TO-ROOM AIRBORNE SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume sending room: 73 m^3

volume receiving room: 66 m^3

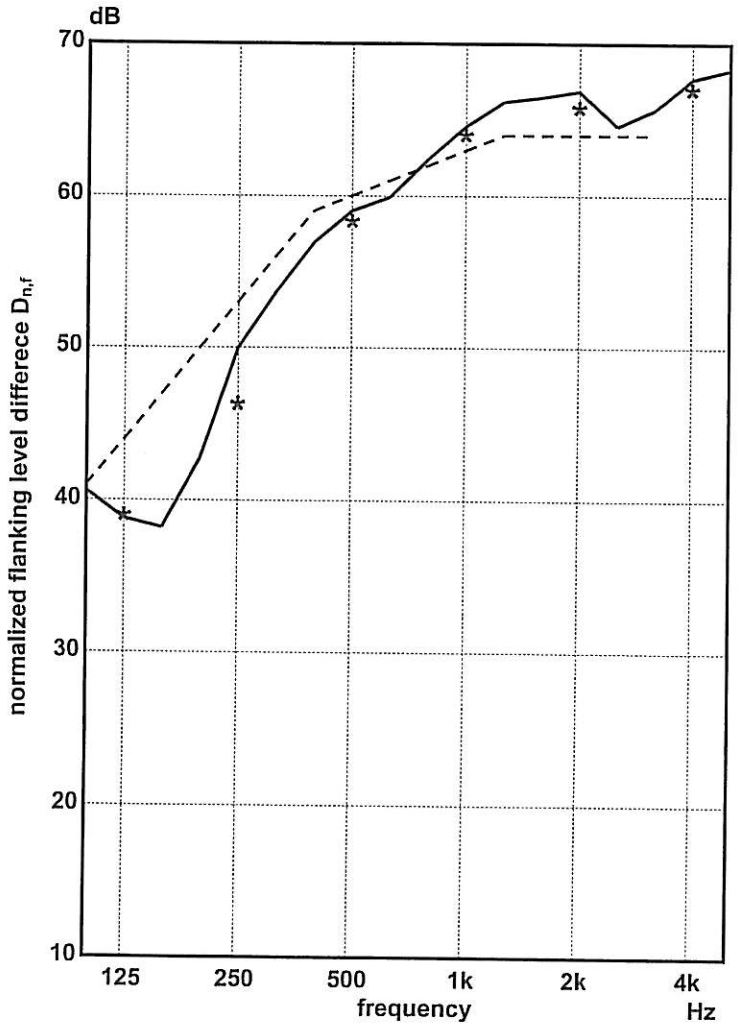
reference area: 10 m^2

measured at: laboratory conditions

signal: broad-band noise

bandwidth: 1/3 octave

ISO 717-1:1996
$D_{n,f,w}(C;C_{tr})$ = 60(-4;-8) dB



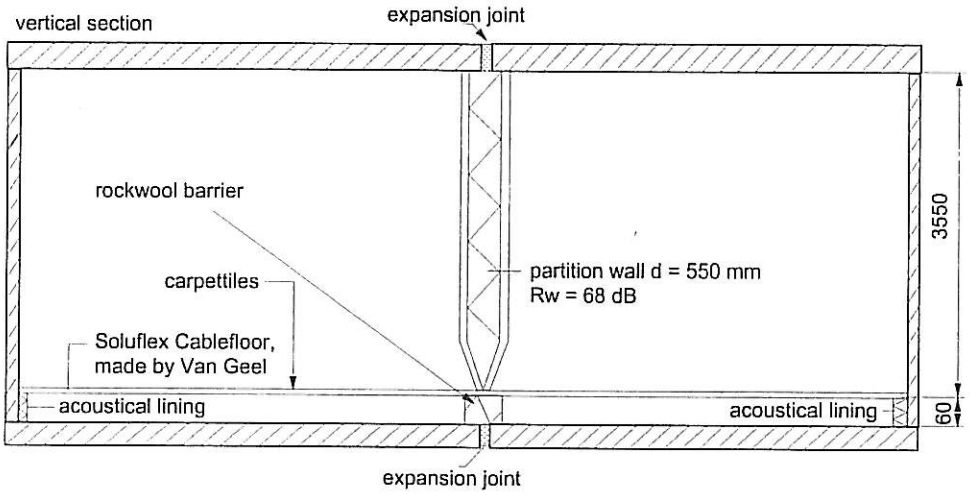
	40.6	42.7	56.9	62.4	66.5	65.7
1/3 oct.	38.8	50.0	59.0	64.6	66.9	67.7 dB
	38.2	53.6	59.9	66.2	64.6	68.3
1/1 oct.	39.1	46.4	58.4	64.1	65.9	67.1 dB

* 1/1 oct.
——— 1/3 oct.
- - - - ref. curve (ISO 717)

Mook, 11-04-2001

THE ROOM-TO-ROOM AIRBORNE SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume sending room: 73 m^3

volume receiving room: 66 m^3

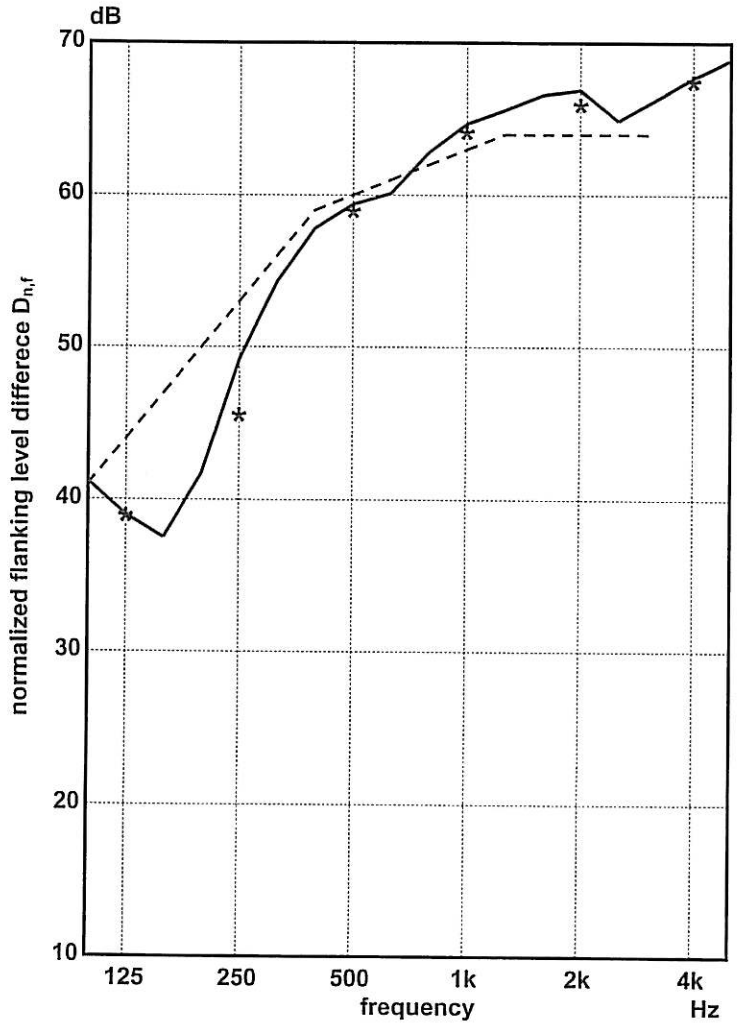
reference area: 10 m^2

measured at: laboratory conditions

signal: broad-band noise

bandwidth: 1/3 octave

ISO 717-1:1996
$D_{n,f,w}(C;C_{tr})$ = 60(-4;-9) dB



	41.2	41.7	57.8	62.8	66.6	66.3
1/3 oct.	39.0	49.2	59.4	64.7	66.9	67.7 dB
	37.5	54.3	60.1	65.6	64.9	68.9
1/1 oct.	39.0	45.6	59.0	64.2	66.0	67.5 dB

* 1/1 oct.
——— 1/3 oct.
- - - - ref. curve (ISO 717)

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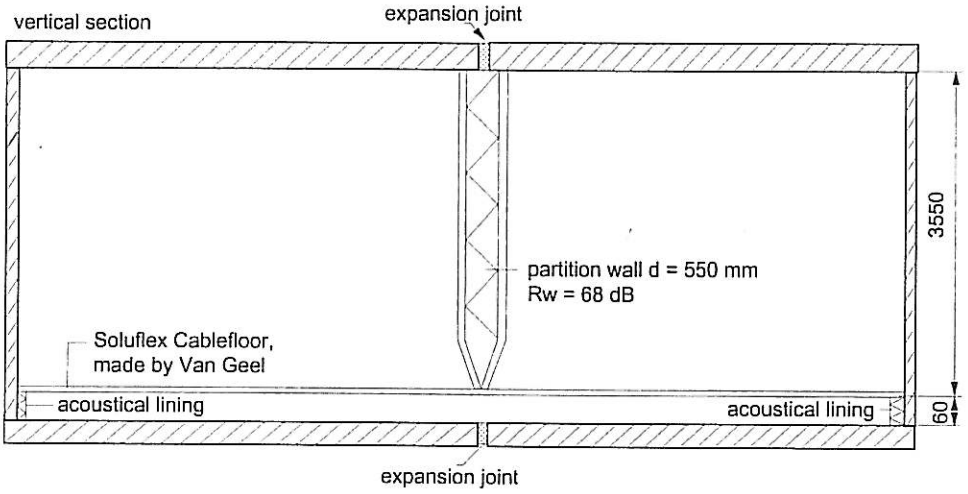
THE ROOM-TO-ROOM IMPACT SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume receiving room: 73 m^3

surface area floor: 41 m^2

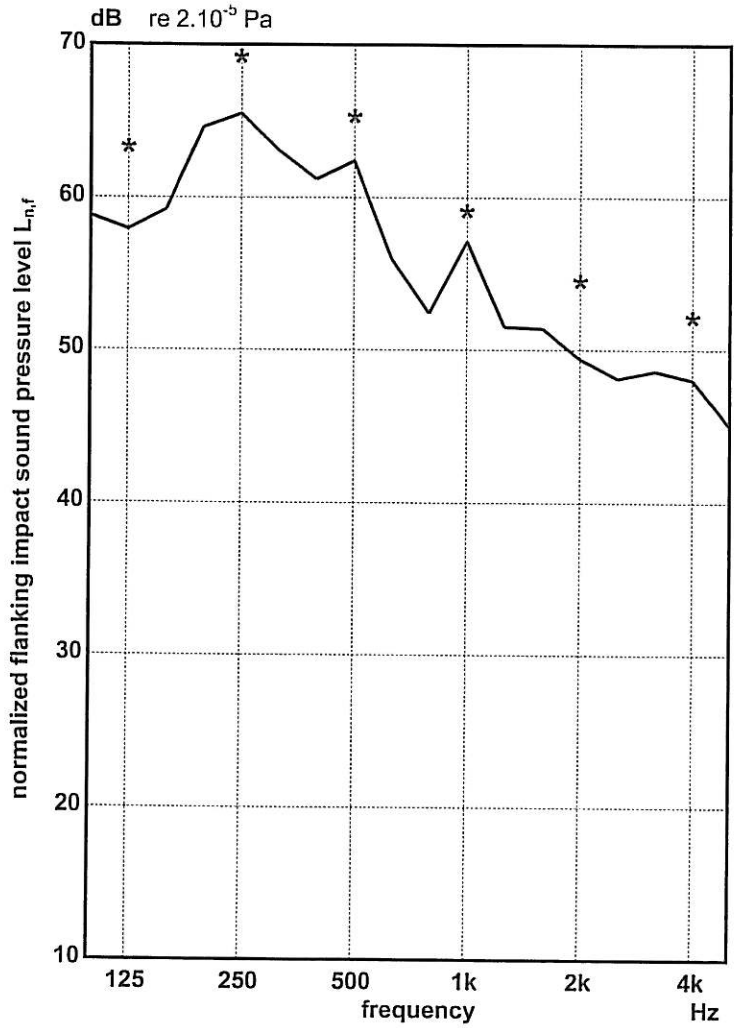
measured at: laboratory conditions

signal: tapping machine

bandwidth: 1/3 octave

A_0 = 10.0 m^2

ISO 717-2:1996
$L_{n,f,w}(C_I)$ = 59(-2) dB



	125	250	500	1k	2k	4k	
	58.8	64.6	61.2	52.4	51.4	48.6	
1/3 oct.	57.9	65.5	62.4	57.1	49.4	48.0	dB
	59.2	63.1	56.0	51.5	48.1	45.0	
1/1 oct.	63.4	69.3	65.4	59.2	54.6	52.2	dB

* 1/1 oct.
——— 1/3 oct.

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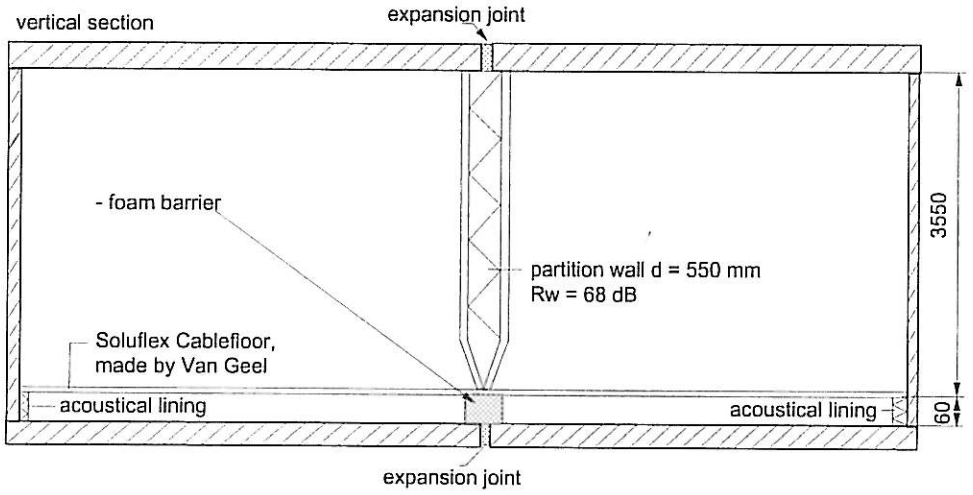
Insulat versie 1.2.5, mode 15 file: a10382 R#:40-45 T#:11-22 B#:10 C#:1 ##:47

THE ROOM-TO-ROOM IMPACT SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume receiving room: 73 m^3

surface area floor: 41 m^2

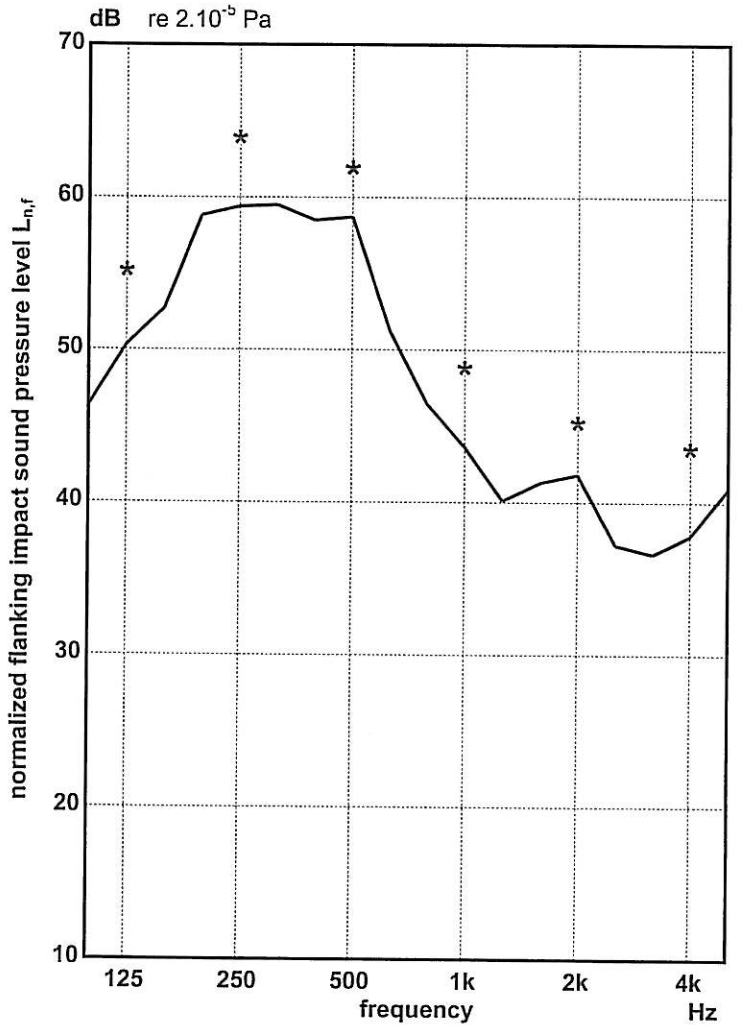
measured at: laboratory conditions

signal: tapping machine

bandwidth: 1/3 octave

A_0 = 10.0 m^2

ISO 717-2:1996
$L_{n,f,w}(C_I)$ = 53(-1) dB



	46.3	58.8	58.5	46.4	41.3	36.6
1/3 oct.	50.3	59.4	58.7	43.6	41.8	37.8 dB
	52.7	59.5	51.3	40.1	37.2	40.9
1/1 oct.	55.3	64.0	62.0	48.9	45.3	43.6 dB

* 1/1 oct.
——— 1/3 oct.

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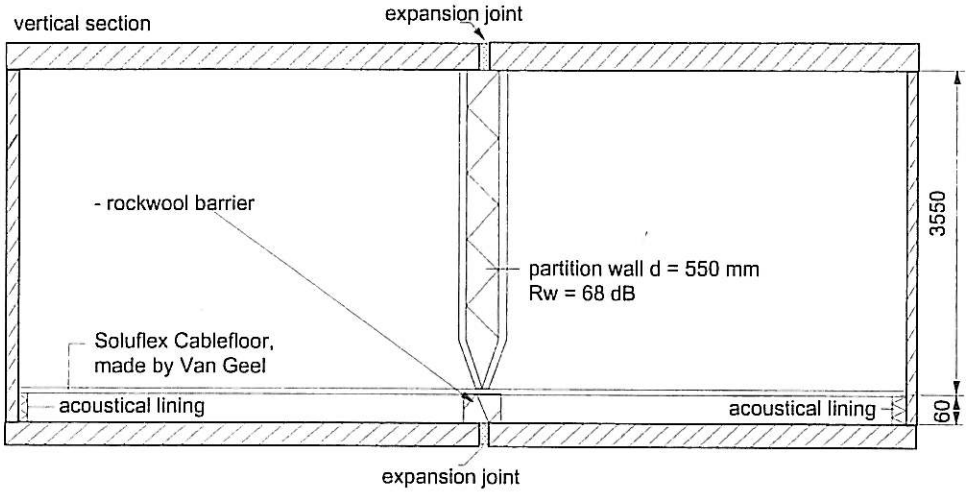
THE ROOM-TO-ROOM IMPACT SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume receiving room: 66 m^3

surface area floor: 41 m^2

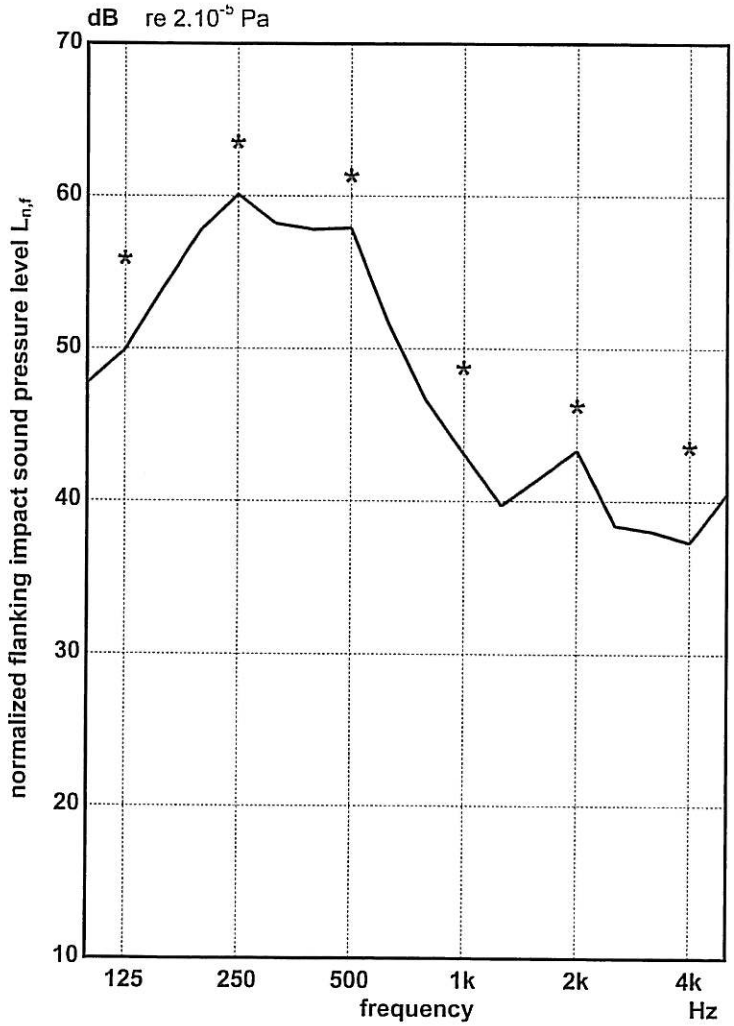
measured at: laboratory conditions

signal: tapping machine

bandwidth: 1/3 octave

A_0 = 10.0 m^2

ISO 717-2:1996
$L_{n,f,w}(C_I)$ = 53(-2) dB



	125	250	500	1k	2k	4k	
	47.7	57.7	57.8	46.6	41.5	38.0	
1/3 oct.	49.9	60.1	57.9	43.1	43.3	37.3	dB
	53.9	58.2	51.7	39.7	38.4	40.5	
1/1 oct.	56.0	63.6	61.4	48.8	46.3	43.6	dB

* 1/1 oct.
——— 1/3 oct.

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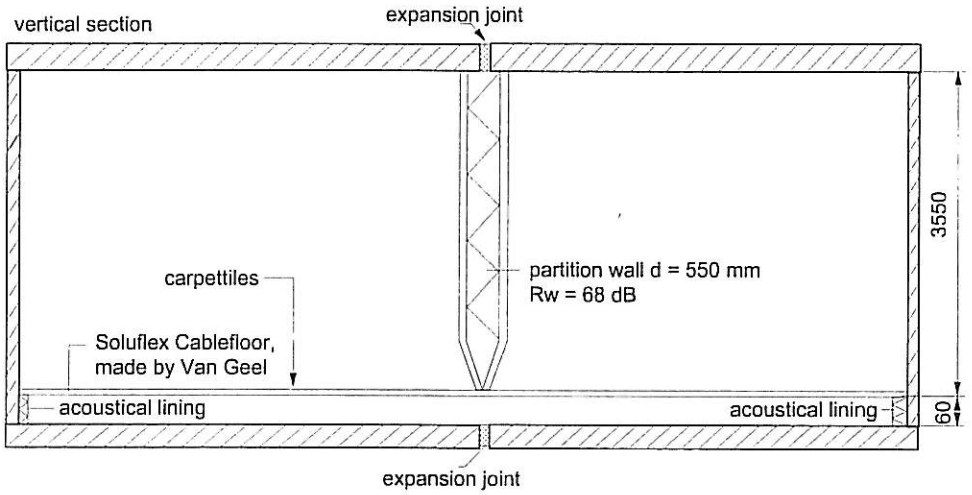
THE ROOM-TO-ROOM IMPACT SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume receiving room: 73 m^3

surface area floor: 41 m^2

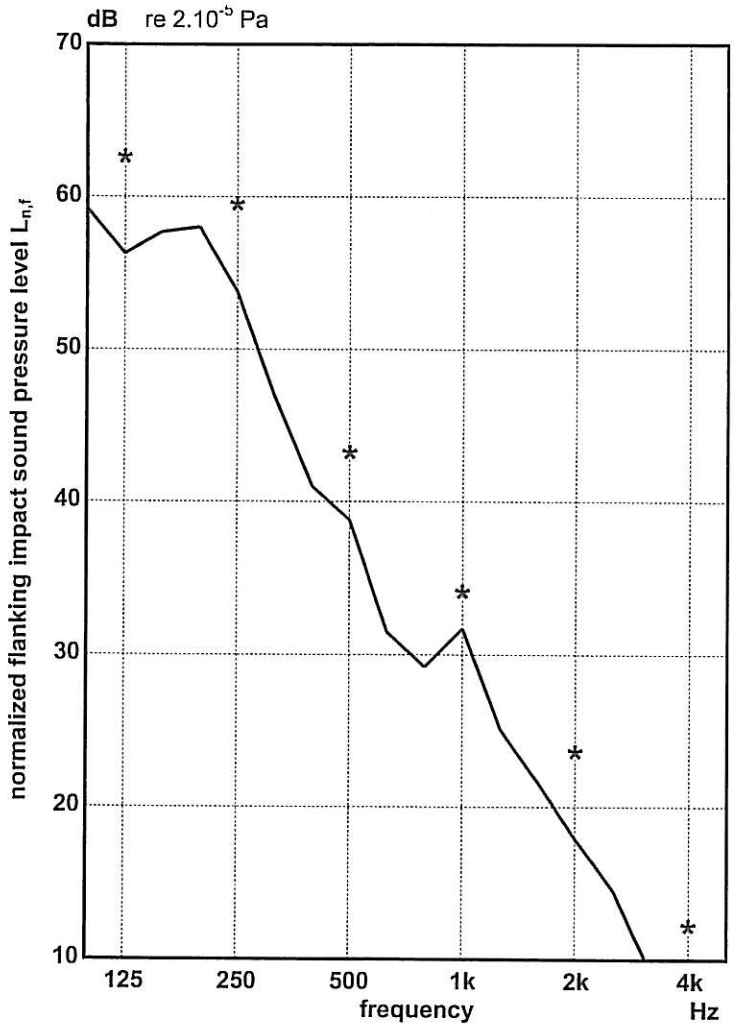
measured at: laboratory conditions

signal: tapping machine

bandwidth: 1/3 octave

A_0 = 10.0 m^2

ISO 717-2:1996
$L_{n,f,w}(C_l)$ = 49(1) dB



	59.2	58.0	41.0	29.2	21.6	9.2
1/3 oct.	56.3	53.8	38.8	31.7	17.9	6.8 dB
	57.7	46.9	31.5	25.1	14.5	6.0
1/1 oct.	62.7	59.6	43.3	34.2	28.7	12.3 dB

* 1/1 oct.
——— 1/3 oct.

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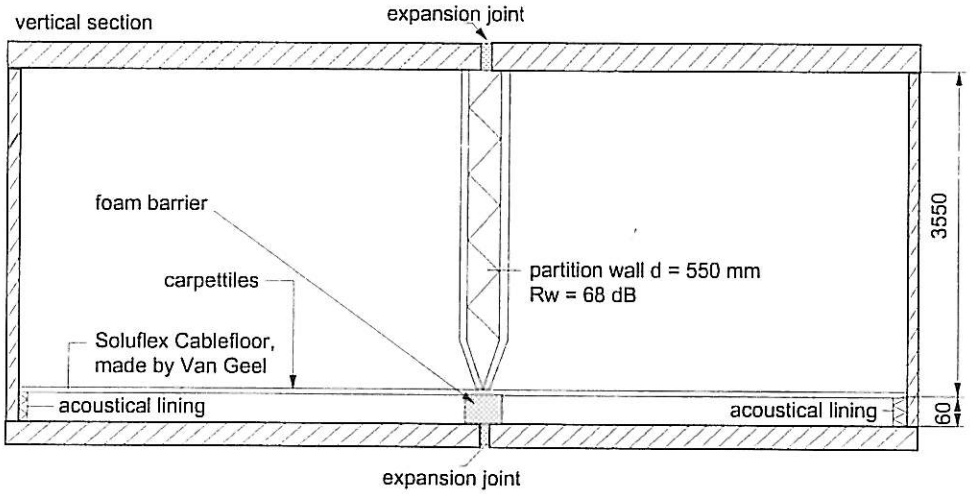
THE ROOM-TO-ROOM IMPACT SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume receiving room: 73 m^3

surface area floor: 41 m^2

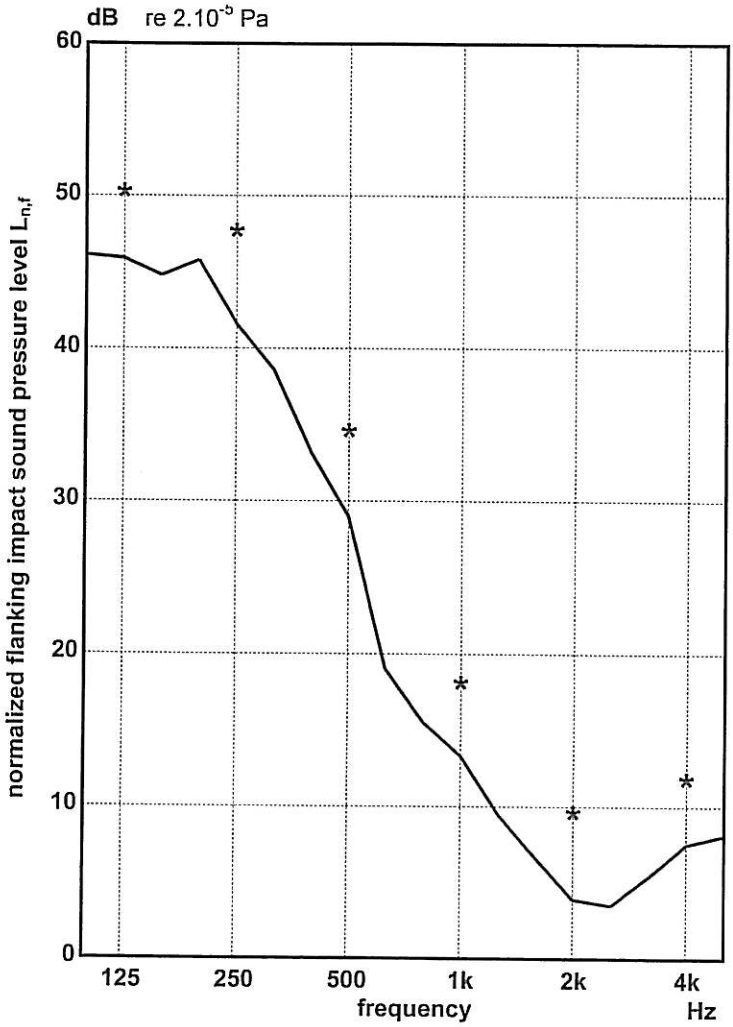
measured at: laboratory conditions

signal: tapping machine

bandwidth: 1/3 octave

A_0 = 10.0 m^2

ISO 717-2:1996
$L_{n,f,w}(C_I)$ = 37(0) dB



	125	250	500	1k	2k	4k	
	46.1	45.8	33.2	15.5	6.6	5.4	
1/3 oct.	45.9	41.6	29.0	13.3	3.9	7.5	dB
	44.8	38.6	19.0	9.5	3.5	8.1	
1/1 oct.	50.4	47.8	34.7	18.2	9.7	11.9	dB

* 1/1 oct.
——— 1/3 oct.

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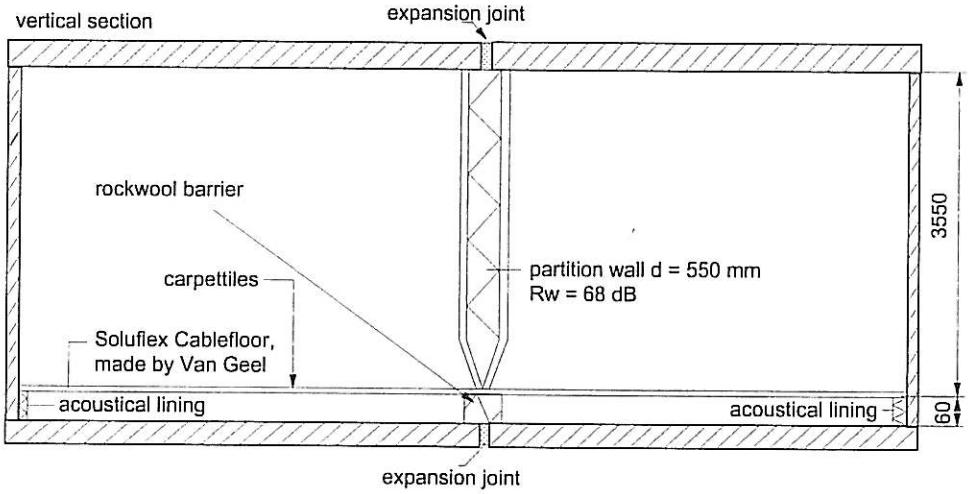
THE ROOM-TO-ROOM IMPACT SOUND INSULATION OF AN ACCESS FLOOR ACCORDING TO ISO 140-12:2000
principal: Van Geel Legrand B.V.

construction tested:



volume receiving room: 73 m^3

surface area floor: 41 m^2

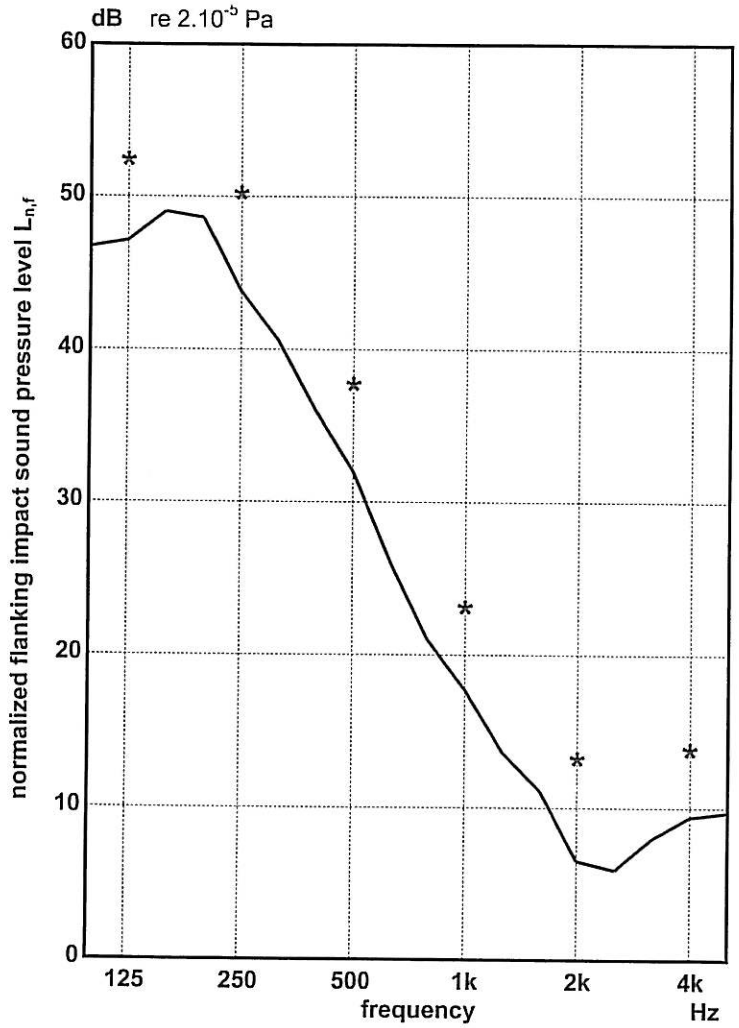
measured at: laboratory conditions

signal: tapping machine

bandwidth: 1/3 octave

A_0 = 10.0 m^2

ISO 717-2:1996
$L_{n,f,w}(C_I)$ = 39(1) dB



	46.7	48.6	36.0	21.0	11.1	8.0
1/3 oct.	47.1	43.8	32.0	17.7	6.5	9.4 dB
	49.0	40.6	26.1	13.6	5.9	9.7
1/1 oct.	52.5	50.3	37.8	23.2	13.3	13.9 dB

* 1/1 oct.
——— 1/3 oct.

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