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TEST REPORT N. 54/10

Date of issue: 08/06/2010

Client: Geoplast SpA
Via Martiri della Libertà, 6/8 - Grantorto (PD)

Type of test: Measurement of the acoustic insulation of airborne noise according to the technical standard UNI EN ISO UNI EN ISO 140-4 (2000)

Test subject: Intermediate floor between the first floor and ground floor of multi-family residential building in via Santocchia a Foligno (PG)

Identification of partition: Slab between P1 attic bedroom unit on the first floor and master bedroom on the ground floor units T1

Construction characteristics:
- Plaster, 1 cm
- Lightened slab with elements Geoplast Nautilus 5 +16 +4 cm
- Lightweight concrete for fixture leveling, cm. 10-11
- Resilient material
- Self-leveling screed, 7-8 cm

Surface of the common partition: 9,6 sqm

Volume of the emitting room: 28 cu m

Volume of the receiving room: 28 cu m

Date of test: 04/06/2010

The stratigraphy of the partition test was declared by the Client

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Date of issue:	08/06/2010	**Date of test:**	04/06/2010

Test conditions: The measurements were performed on a building under construction. Doors and windows apertures were plugged with plasterboard panels. As emitting room was chosen room on the first floor.

Instrumentation used:
- Bi-canal phonometer 01dB mod. Symphonie S/N 00882;
- Preamplifier ACLAN mod. PRE 12H S/N 00881;
- Microphone GRAS mod. 40AE S/N 166999;
- Preamplifier ACLAN mod. PRE 21A S/N 20312;
- Microphone Mikrotech Gefell mod. MK250 S/N 2888;
- Acoustic Calibrator ACLAN mod. CAL01 S/N 11038;
- Generator of noise dodecahedral Look Line mod. D301;

Certificates of calibration of the measuring system were issued on 20/5/10 by n. 164 (certificates n. F0516_10 e n. F0517_10) and in date 28/1/10 by n. 164 (certificate n. C0361_10).

Dettagli sull'esecuzione di prova: In the emitting room, the noise machine was placed in two different positions at a distance greater of 1.4m and from the perimeter walls greater than 0.5 m. The two positions . The two positions do not identify any plane parallel to the walls. For each position were performed five measurements of the sound pressure level for bands of 1/3 octave in the emitting room and five in the receiving room.
The microphone, mounted on the appropriate tripod, was placed in the receiving room in distinct points, distant from each other at least 0.7 m, at least 0.5 m away from the walls and 1 m from the emitting source.
Were performed ten measurements of the sound pressure in the emitting room and ten in the receiving room, two by two together (emitting side and receiving side) with integration time always greater than 10 seconds.
In the receiving room were also measured the level of background noise and reverberation time at various frequencies, repeating twice the test in at least three points, with the impulsive source method

Boundary conditions of the measurements: None

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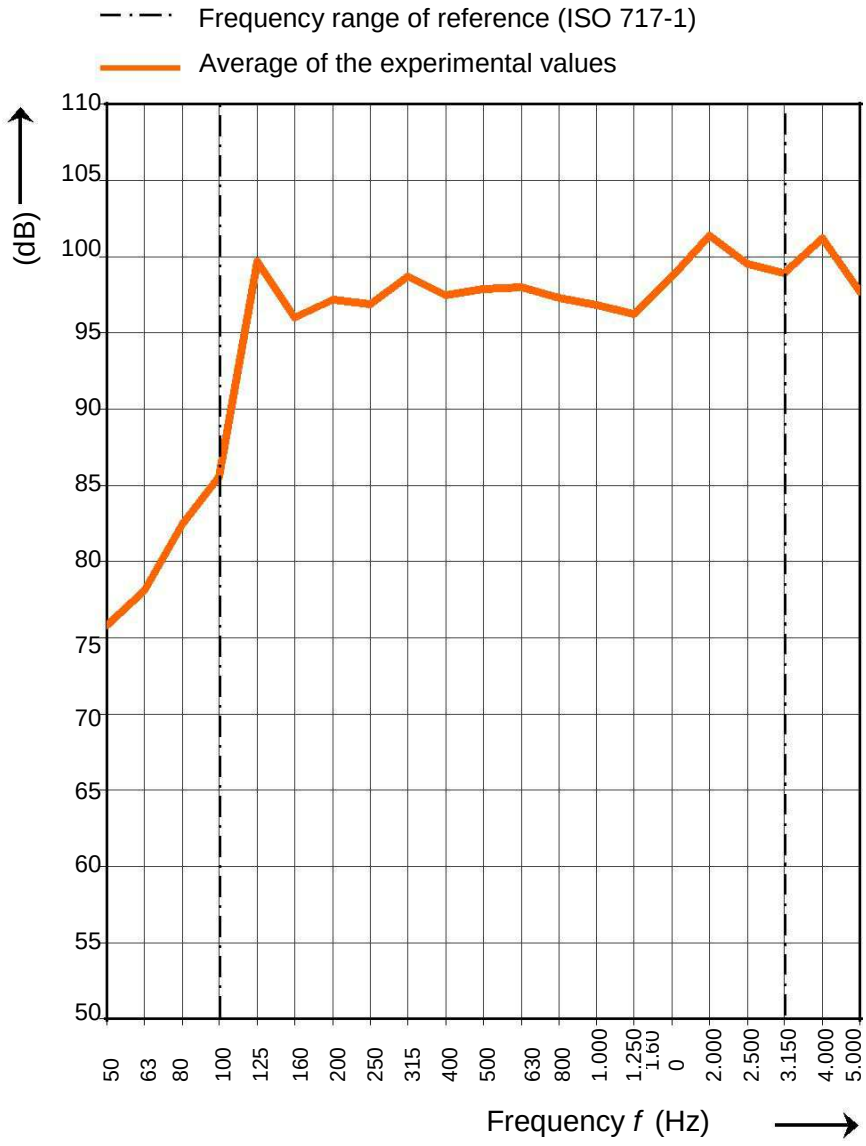
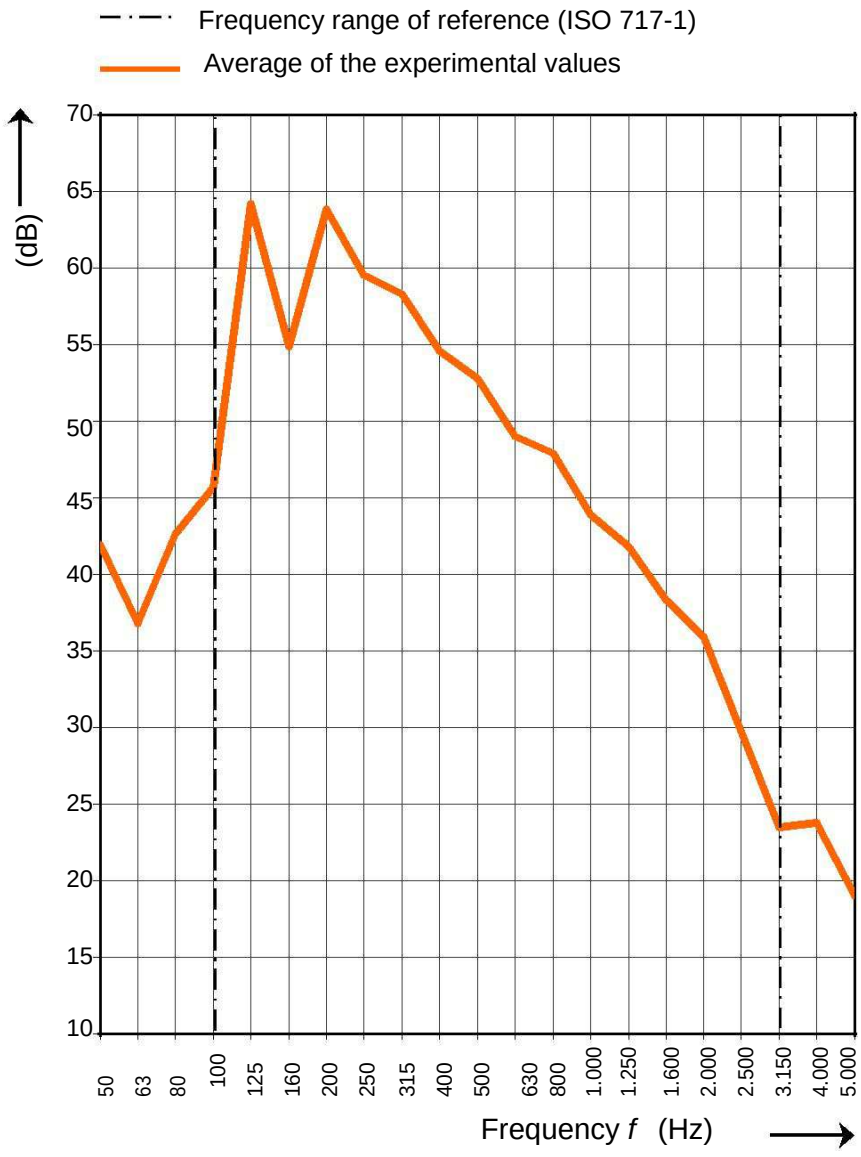
1 - Average level of footsteps sound pressure measured in the emitting room (L_e)

Frequency *f* (Hz)	L_e 1/3 octave (dB)
50	75,8
63	78,1
80	82,5
100	85,6
125	99,7
160	96,0
200	97,2
250	96,9
315	98,7
400	97,5
500	97,9
630	98,0
800	97,3
1.000	96,8
1.250	96,2
1.600	98,7
2.000	101,4
2.500	99,5
3.150	98,9
4.000	101,2
5.000	97,7



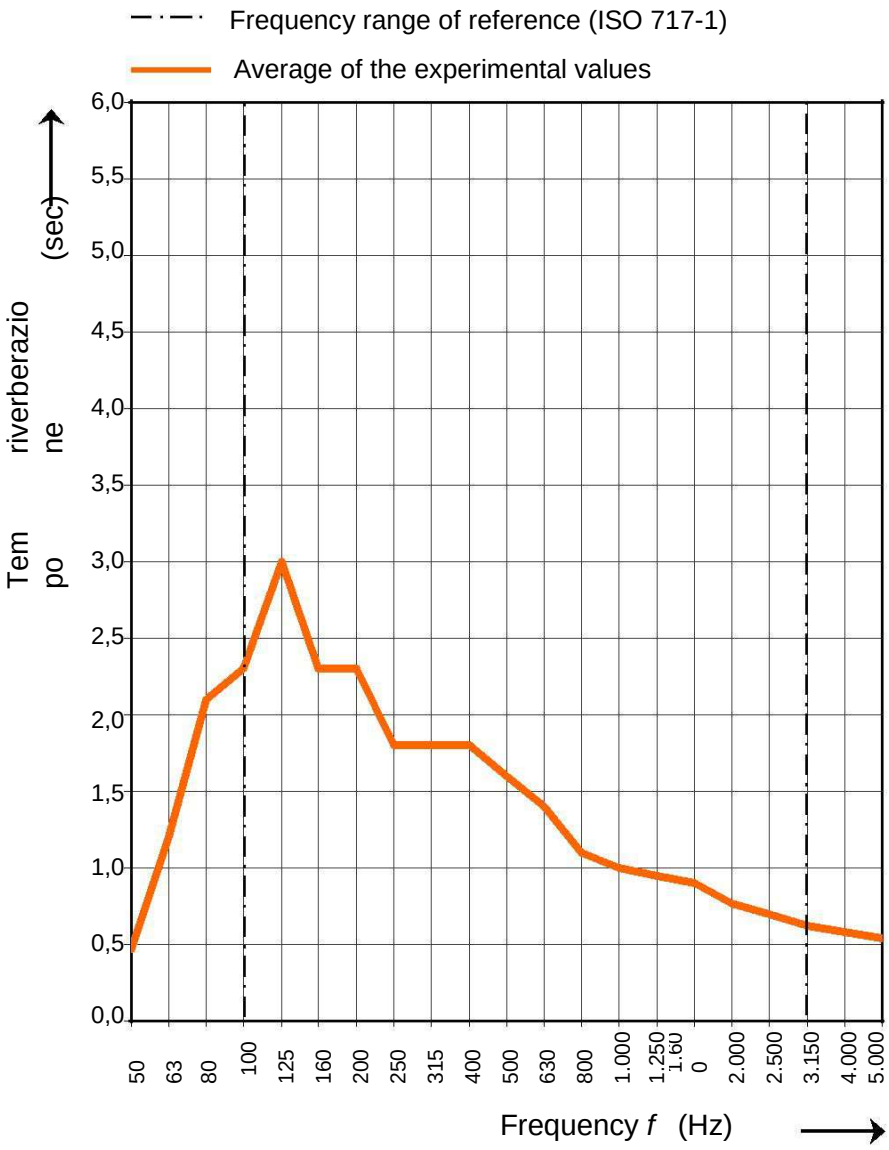
2 - Average level of footsteps sound pressure measured in the receiving room (L_r)

Frequency *f* (Hz)	L_r 1/3 octave (dB)
50	41,9
63	36,8
80	42,6
100	45,7
125	64,2
160	54,9
200	63,8
250	59,5
315	58,3
400	54,6
500	52,8
630	49,0
800	47,9
1.000	43,9
1.250	41,8
1.600	38,3
2.000	35,9
2.500	29,8
3.150	23,5
4.000	23,8
5.000	19,0



3 - Average reverberation time measured in the receiving room (T_{rev})

Frequency *f* (Hz)	T_{rev} 1/3 octave (sec)
50	0,5
63	1,20
80	2,1
100	2,30
125	3,0
160	2,30
200	2,30
250	1,80
315	1,80
400	1,80
500	1,60
630	1,40
800	1,10
1.000	1,00
1.250	0,95
1.600	0,90
2.000	0,77
2.500	0,70
3.150	0,62
4.000	0,58
5.000	0,54



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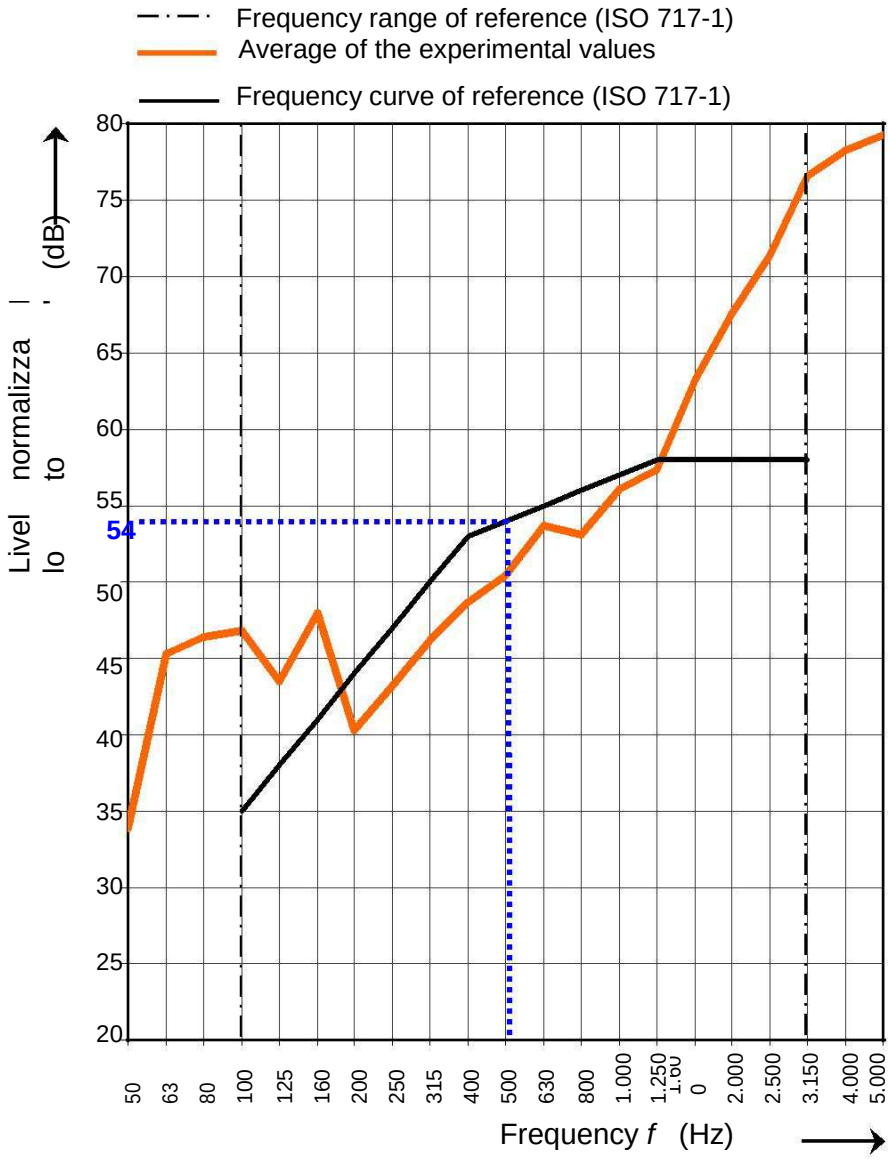
4 - Evaluation index of the apparent airborne sound insulation (R'_w)

Frequency *f* (Hz)	R' 1/3 octave (dB)
50	33,9
63	45,3
80	46,4
100	46,8
125	43,5
160	48,0
200	40,3
250	43,2
315	46,2
400	48,7
500	50,4
630	53,7
800	53,1
1.000	56,1
1.250	57,4
1.600	63,2
2.000	67,6
2.500	71,4
3.150	76,6
4.000	78,3
5.000	79,3



Evaluation index according to ISO 717-1: **R'_w = 54 dB**

Terms of adaptation to the spectrum for pink noise and the noise from traffic :

C = 0 dB C_{tr} = -3 dB

Assessment based on the results of measurements obtained by the third-octave by a method technical design

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