

TEST REPORT N. 53/2010

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 footsteps noise according to the technical standard UNI EN ISO 140-7 (2000)
Test subject:	Intermediate floor between the first floor and ground floor of multi-family residential building in via Santocchia a Foligno (PG) - lotto 56
Identification of partition:	Slab between P1 attic bedroom unit on the first floor and master bedroom on the ground floor units T1
Construction characteristics:	<ul style="list-style-type: none">- Plaster, 1 cm- Lightened slab with elements Geoplast Nautilus 5 +16 +4 cm- Lightweight concrete for fixture levelling, cm. 10-11- Resilient material- Self-leveling screed, 7-8 cm
Resilient layer:	Mat made from bituminous sheath coupled to polyester fibers, laid in a double layer
Surface of the common partition:	9,6 sqm
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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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).

Details on test: In the emitting room, the footsteps machine was placed in four different positions, chosen at random on the floor tested. The minimum distance between the footsteps machine and the perimeter walls of the environment has always been greater than 0.5 meters. The support line of hammers was inclined at 45 ° with respect to the axis of the beams. The microphone, mounted on the appropriate tripod, was placed in the receiving room in four distinct points, distant from each other at least 0.7 m. And at least 0.5 m away from the walls. Were performed eight measurements of the sound pressure level for bands of 1/3 octave, by choosing different combinations of the positions of the microphone and footsteps generator, with integration time always greater than 9 seconds.

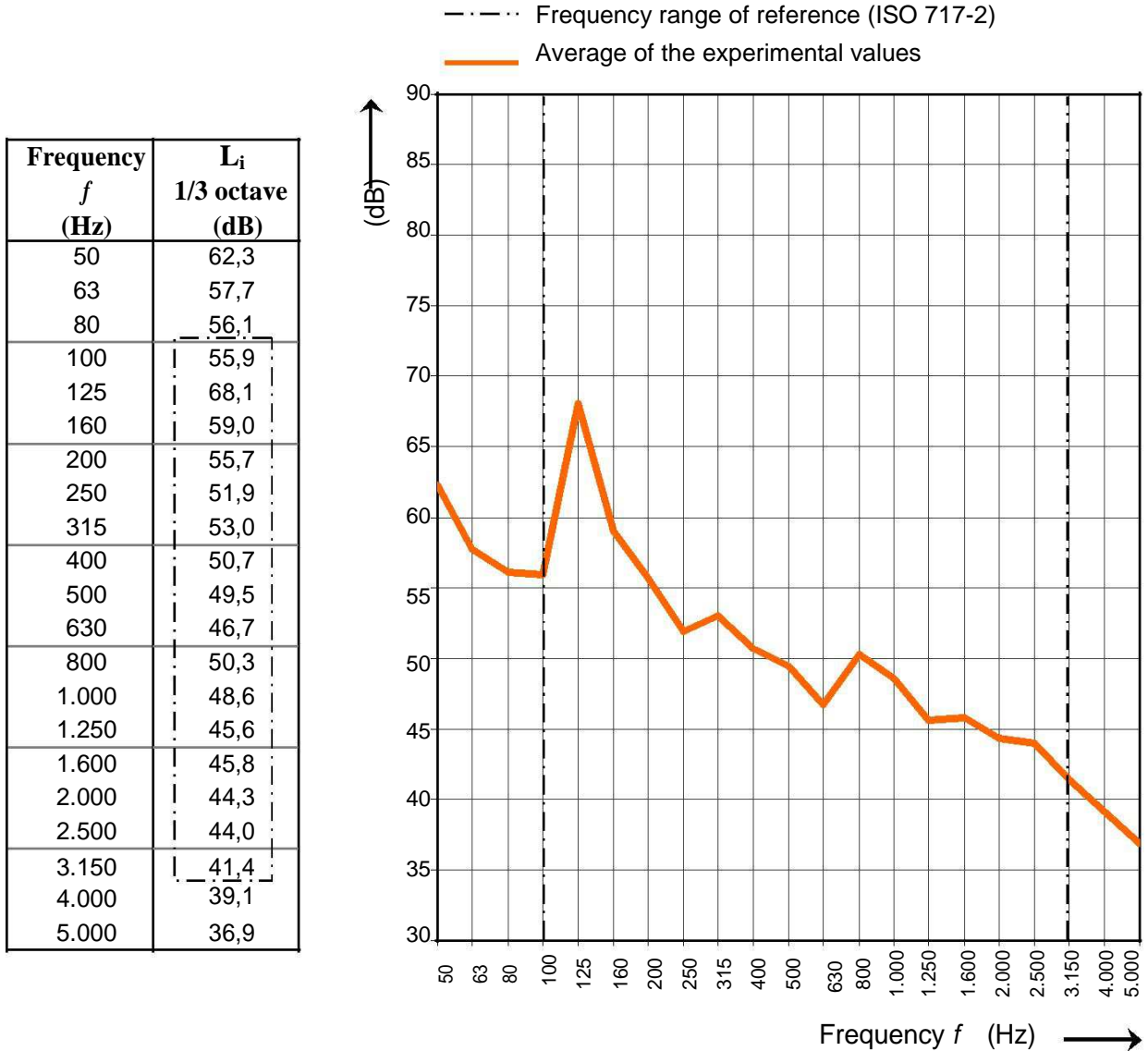
In the receiving room were also measured the level of background noise and reverberation time at various frequencies, repeating twice the test in at least three points, with the impulsive source method

Boundary conditions of the measurements: None

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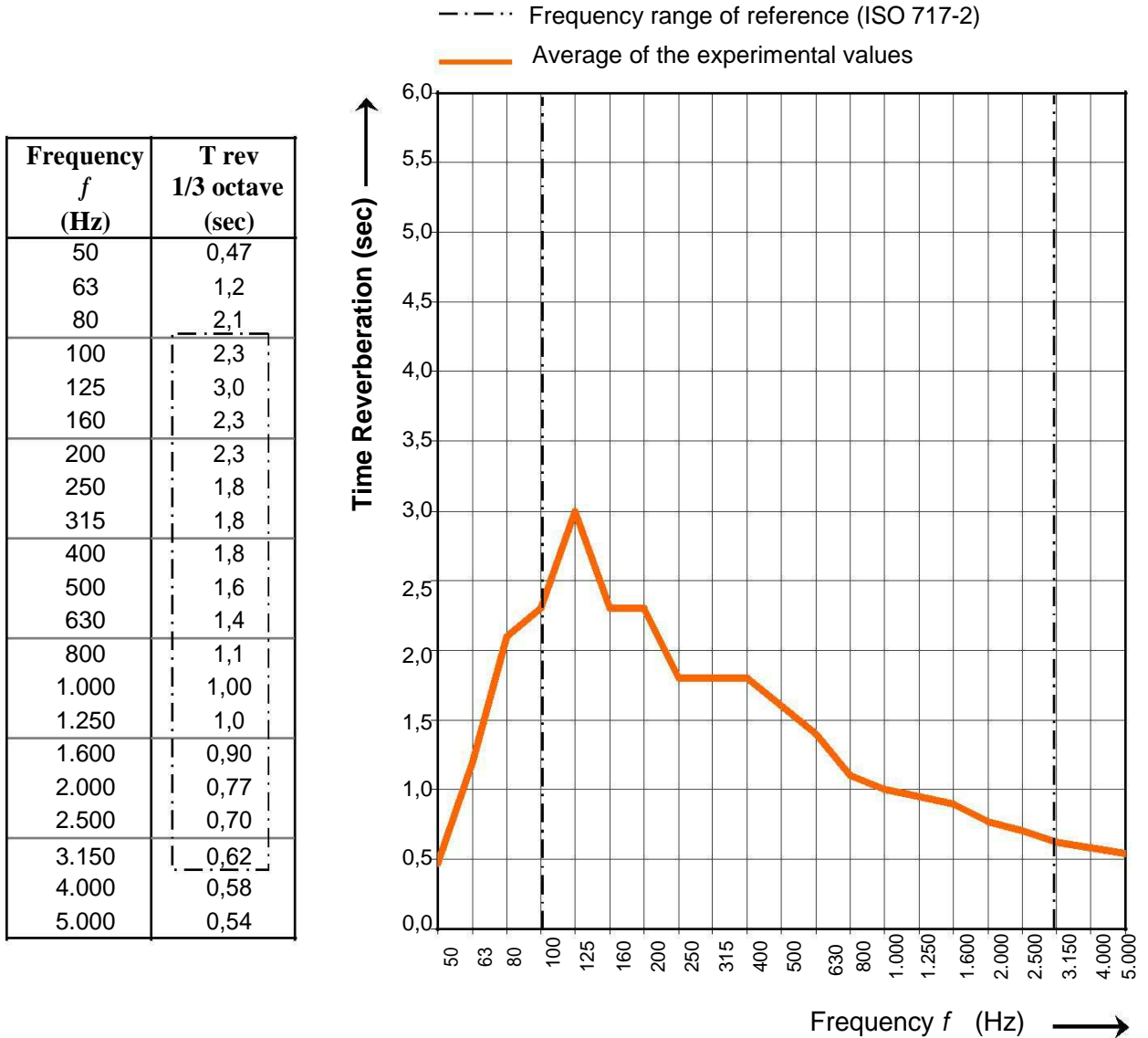
1 - Average level of footsteps sound pressure measured in the receiving room (L_i)



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

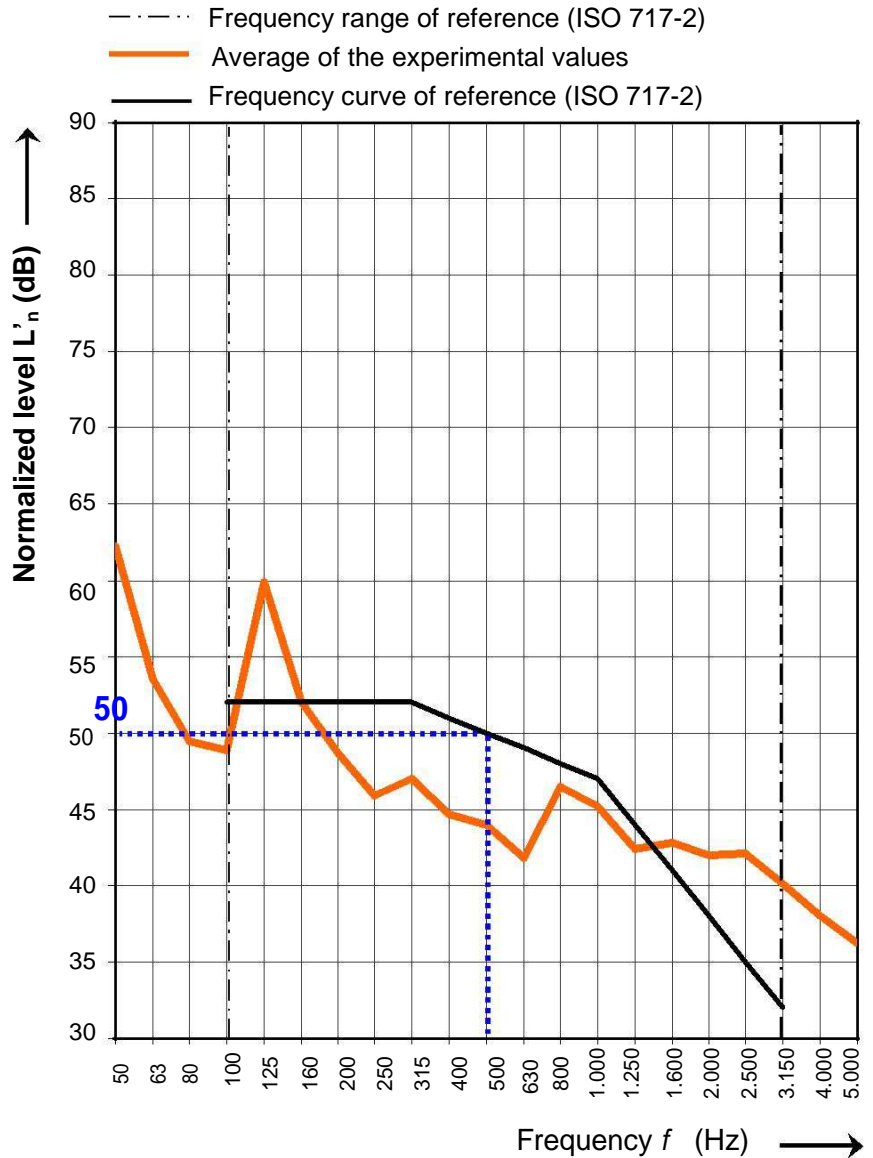


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3 - Evaluation index of the level of footsteps sound pressure normalized on sound absorption ($L'_{n,w}$)

Frequency f (Hz)	L'_n 1/3 octave (dB)
50	62,2
63	53,5
80	49,5
100	48,9
125	59,9
160	52,0
200	48,7
250	45,9
315	47,0
400	44,7
500	44,0
630	41,8
800	46,5
1.000	45,2
1.250	42,4
1.600	42,8
2.000	42,0
2.500	42,1
3.150	40,1
4.000	38,0
5.000	36,2



Evaluation index according to ISO 717-2:

$L'_{n,w} = 50 \text{ dB}$

Terms of adaptation to the spectrum for the standard and extended frequency range:

$C_1 = -3 \text{ dB}$

$C_{1,50-2500} = 1 \text{ dB}$

Evaluation based on results of measurements obtained by using one-third octave method