

Translation of original document

SPC

School campus in Geesseknaeppchen, Luxembourg

Subject: Verification of: - aerial noise insulation between class rooms
- acoustical correction of the test room

Measurement conditions

The aerial noise insulation measurements were conducted between two teaching rooms equipped with windows and doors.

Reverberation times were measured in two rooms of the same volume, one of them after acoustical treatment and the other one devoid of any acoustical correction.

Localization:

- Test room nr. 31: entirely done up but without furniture
- Room nr. 30: without acoustical treatment

Absorbing product used: SONASPRAY K-13 (spray-on)
- Thickness: 25 mm
- Structure: see architectural plan

Results and analyses

1 - Aerial noise insulation between two adjacent rooms

table 1

Test nr.	Sending room	Receiving room	Separation wall	Demanded insulation DnAT dBA	Measured insulation DnAT dBA	Assessment
01	Room nr. 30	Room nr. 31	Slag bricks, 240 mm thick	≥ 44	47	conforming

The insulation measured between the two adjacent teaching rooms is satisfactory. It will be slightly better after fixation of iron angles on both sides of the ceiling/walls junction.

2 – reverberation times

Comparative table

table 2

Test nr.	Receiving room	Acoustical treatment	measured RT (sec)			average RT (500, 1K, 2K Hz)	Objective
			500	1000	2000		
02	Room nr. 31	SONASPRAY K13 (25 mm)	0.90	0.75	0.70	0.78	0.4 < RT < 0.8
03	Room nr. 30	None	2.70	2.80	2.40	2.83	

The results of the acoustical correction prove the effectiveness of the advised treatment. We can note a decrease of the reverberation time of nearly 2 seconds after the treatment, thereby guaranteeing a satisfactory communication between teachers and pupils.

The resulting acoustical quality is perfectly adequate to the purpose of the concerned room.

- The arched source of the ceiling receiving the acoustical projection can be reduced from 1.50 m to 0.92 m.
- The treated area above the entry door will be reduced from 25 mm to 10 mm.

These two corrections are not susceptible to fundamentally modify the initial acoustical treatment.