

Determination of the Installation sound level L_{in} in the laboratory

P-BA 219/2006e

Table 1

Client: REDI S.p.a, Via Madonna dei Prati 5/A, 40069 ZOLA BREDOSA – BOLOGNA, ITALY

Test specimen: Wastewater installation system (test specimen S 9760-01) consisting of "REDI Phonoline 110x5.0" plastic pipes and fittings (manufacturer: REDI) mounted with pipe clamps "Bismat 1000" (manufacturer: Walraven).

Test set-up:

- The pipe system was mounted according to Figure 4 (see also Annex A).
- The system consisted of wastewater pipes (nominal size OD 101.6), three inlet tees, two 45°-basement bends and a horizontal drain section. The inlet tees in the basement and in the ground floor were closed by lids supplied by the manufacturer. The pipe system was mounted by a plumber enterprise.
- Pipe system "REDI Phonoline": size OD 110, one-layer pipe, material: PVC with mineral filler, wall thickness 5.0 mm, weight 2.9 kg/m, density 1.6 g/cm³. One-layer fittings, size OD 110, material: PVC with mineral filler, wall thickness 3.2 mm, density 1.4 g/cm³. Connection of the pipes by plug-on socket connection.
- Pipe clamps "Bismat 1000": structure born sound insulating support attachment consisting of supporting and fixing clips. Fixed to the installation wall with dowels and thread rods.

Test facility: Installation test facility P12, mass per unit area of the installation wall: 220 kg/m², installation rooms: sub-basement (KG), basement (UG) front, ground floor (EG) front and top floor (DG), measuring rooms: UG front, UG rear (details in Annex P and EN 14366: 2005-02)

Test method: The measurements were performed following EN 14366 and German standard DIN 52 219: 1993-07; noise excitation by constant water flow with 0.5 l/s, 1.0 l/s, 2.0 l/s and 4.0 l/s (details in Annexes A and F).

Results:

Waste water system "REDI Phonoline" with pipe clamps "Bismat 1000"					
	Flow rate [l/s]	0,5	1,0	2,0	4,0
Installation sound level L_{in} [dB(A)] measured in the basement test-room UG front		45	48	51	54
Installation sound level L_{in} [dB(A)] measured in the basement test-room UG rear		8	11	15	19
Airborne sound pressure level $L_{a,A}$ [dB(A)] ¹⁾		45	48	51	54
Structure-borne sound characteristic level $L_{sc,A}$ [dB(A)] ¹⁾		3	7	12	16

¹⁾ Evaluation according to DIN EN 14366.

Date of tests: September 12, 2006

Comments:

- The requirements of DIN 4109 only apply for the installation sound level L_{in} measured in the test room UG rear.
- By using supporting and fixing clips the details of attachment strongly affects the acoustical properties of the system. Only if the assembly instructions of the manufacturer are obeyed exactly and the weight of the system is distributed evenly on all fastening elements, a reproducible acoustical behaviour is reached. Otherwise possibly strong deviations from the measured values may occur.