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

P-BA 288/2007e

Table 1

Client: NUEVA TERRAIN S. L., Paduleta, 2, 01015 VITORIA, SPAIN

Test specimen: Wastewater installation system (test specimen S 9961-01) consisting of "TERRAIN SDP STANDARD PVC, 110x3.2" plastic pipes and fittings (manufacturer: NUEVA TERRAIN S. L.) mounted with pipe clamps "sound proof support bracket" (manufacturer: REHAU).

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 110), three inlet tees (45°), 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 technical firm.
- Pipe system "TERRAIN SDP STANDARD PVC, 110x3.2": size OD 110, one-layer pipe with attached sleeve, material: PVC, wall thickness 3.2 mm, weight 1.64 kg/m, density 1.45 g/cm³. One-layer fittings "TERRAIN SDP STANDARD PVC, 110x3.2", size OD 110, material: PVC, wall thickness 3.2 mm, density 1.45 g/cm³. Connection of the pipes by plug-on socket connection. (Values are manufacturer's information.)
- Pipe clamps "sound proof support bracket" consisting of supporting and fixing clips and loose clips, all with rubber inlay. The pipe clamps were 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 German standard DIN 52 219: 1993-07 and EN 14366; noise excitation by permanent 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 " TERRAIN SDP STANDARD PVC, 110x3.2" with pipe clamps "sound proof support bracket"				
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	44	49	51	54
Installation sound level L_{in} [dB(A)] measured in the basement test-room UG rear	4	8	13	18
Airborne sound pressure level $L_{a,A}$ [dB(A)] [1)]	44	49	51	54
Structure-borne sound characteristic level $L_{sc,A}$ [dB(A)] [1)]	1	5	10	14

[1)] Evaluation according to EN 14366.

Date of tests: November 5, 2007

Comments:
- The requirements of DIN 4109 only apply for the installation sound level L_{in} measured in the test room UG rear.

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The tests were performed in a laboratory accredited by the German Accreditation System for Testing (DAP, file no. PL-3743.26) according to standard EN ISO/IEC 17025.

Stuttgart, December 19, 2007

Head of Laboratory: