

Measurement of Water Appliance Noises in the Laboratory

Enclosure 2

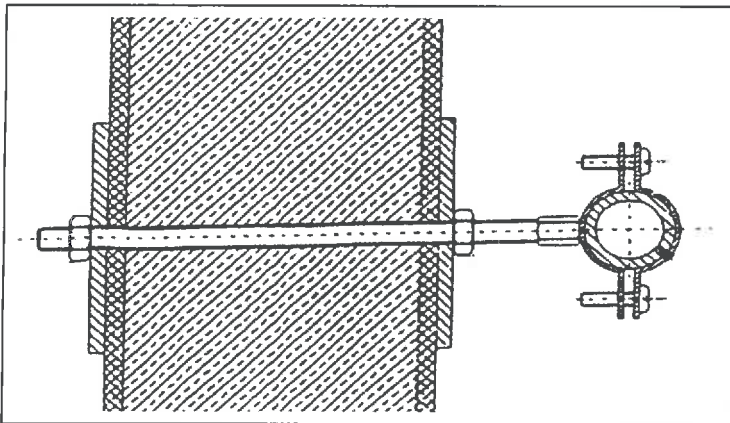
according to DIN EN ISO 3822-1, 07.2009

Client: Pentair Engineered Electrical & Fastening Solutions, Jules Verneweg 75, 5015 BG Tilburg, The Netherlands
Test object: 1" steel pipe, outer dia $d = 33,7$ mm, fastened with Pipe clamp CADDY MACROFIX Insulated M8/M10, 31-37 mm, 1", stainless steel (Article Number MFD037S6)
Operation: Withdrawal with IGN according to DIN EN ISO 3822-1 at flow pressure of 0.3 Mpa (3 bar)

Evaluation:

Measurement of the noise transmission at octave centre frequencies $f = 125$ to 4000 Hz and calculation of the difference between "rigid" and "decoupled" fastening, Evaluation using the normative IGN-reference values, conversion to the average expected noise transmission in the building. **Measurement 1** on 10.10.2017, air temperature in test stand: $20,1$ °C, relative humidity: $53,8$ %

Schematic diagram for build-up of test object:

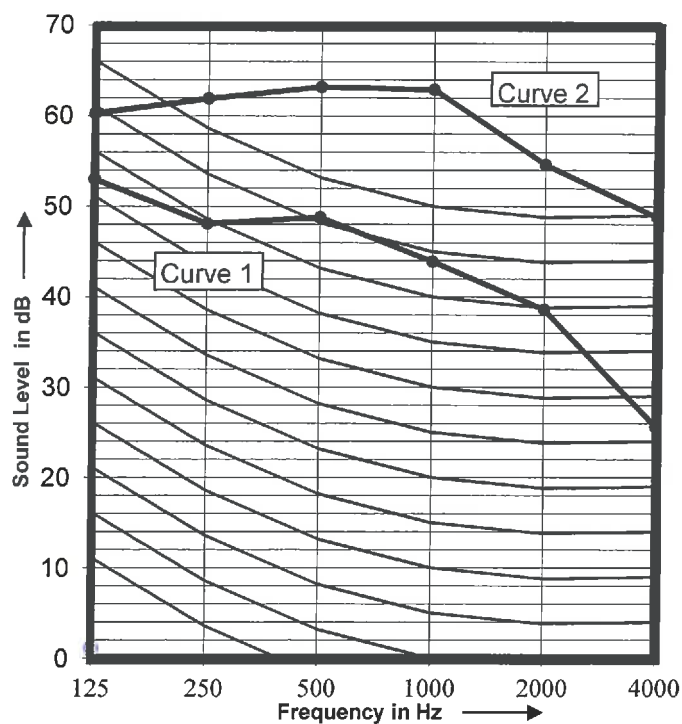


Test Criteria:

Volume test room: $V = 74,3$ m³
Aver. reverb. time: $\bar{T}_N = 1,33$ s
Area measuring wall: $F = 8,20$ m²
Area density: $g_F = 232$ kg/m²
Length measuring pipe: $L = 3,20$ m
Outer diameter: $D = 33,7$ mm
Flow pressure: $p = 0,30$ MPa
Throughput: $q = 0,13$ l/s

Decoupling insert: **profiled rubber**

Measuring diagram:



Evaluation:

Curve 1: Noise transmission with fastening with pipe clamp type see above

$L_{IN} = 29$ dB(A)

Curve 2: Noise transmission when using rigid fastening

$L_{IN} = 45$ dB(A)

Improvement:

Frequency f [Hz]	125	250	500	1000	2000	4000
VM L_{IN} [dB]	7,3	13,8	14,4	19,0	16,0	23,3

A-Evaluation $L_{IN} = 16$ dB(A)

No. of Test Report: 1717-002-17
SG-Bauakustik
Institut für schalltechnische Produktoptimierung
Mainstrasse 15
45478 Mülheim an der Ruhr, 11.10.2017

Stefan Grüll