

Measurement of Water Appliance Noises in the Laboratory

Enclosure 4

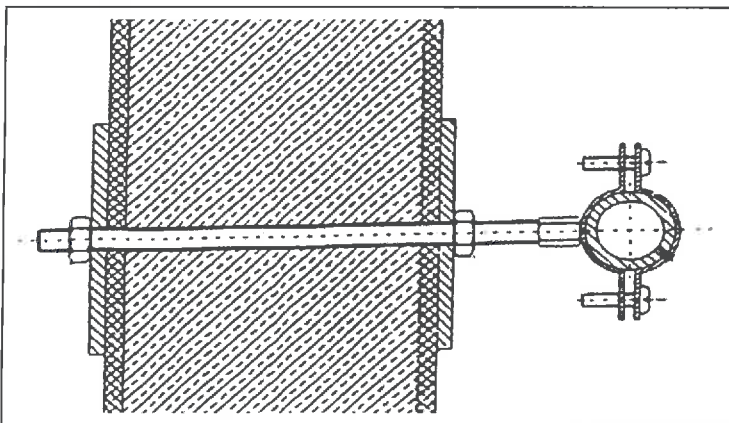
according to DIN EN ISO 3822-1, 07.2009

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, 31-37 mm, 1", (Article Number MFE037)
 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 2** on 13.09.2017, air temperature in test stand: $21,3$ °C, relative humidity: $55,4$ %

Schematic diagram for build-up of test object:

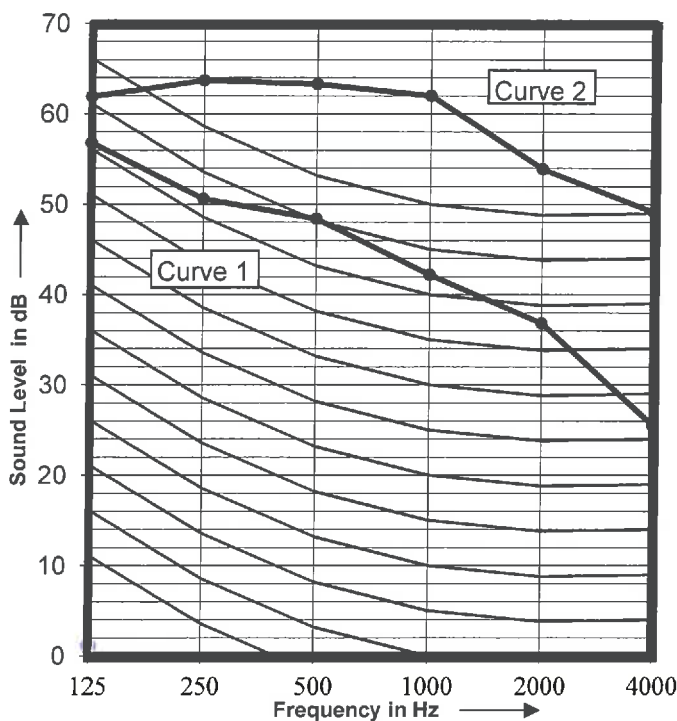


Test Criteria:

Volume test room: $V = 74,3$ m³
 Aver. reverb. time: $\bar{T}_N = 1,34$ 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

$L_{TN} = 28$ dB(A)

Curve 2: Noise transmission when using rigid fastening

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

Improvement:

Frequency f [Hz]	125	250	500	1000	2000	4000
VM L_{IN} [dB]	5,1	13,1	14,9	19,8	17,1	23,6

A-Evaluation $L_{IN} = 17$ dB(A)

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