

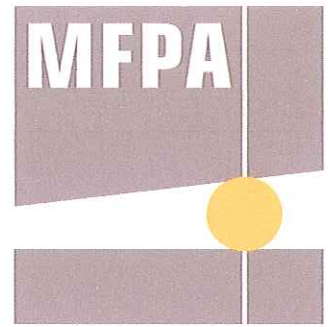
Expert opinion

Distance tube made of fibre concrete

PB 4.2/ 06-208 | 08.11.2006 | english

Influence of several sealings of breakthroughs in a concrete wall by distance tube systems with plug on the air-borne sound insulation characteristics of the concrete wall

Tested by: MFPA Leipzig GmbH, Leipzig



Departement IV - Building physics

Departement Manager: Prof. Dr.-Ing. Peter Bauer

Sound insulation work group

VMPA – sound test site acc. to DIN 4109

Expert opinion

PB 4.2/ 06-208

Dated 2006/11/08 *7.* copy

Applicant:	Max Frank GmbH & Co. KG Mitterweg 1 94339 Leiblfing
Object:	Influence of several sealings of breakthroughs in a concrete wall by distance tube systems with plug on the air-borne sound insulation characteristics of the concrete wall
Sample received on:	10/10/2006
Responsible for preparation:	Dr.-Ing. H.-J. Teichert

This Expert opinion covers 2 sheets

The test report shall be published in unabridged form only. Publication – also of excerpts – shall be subject to the prior written approval by MFPA Leipzig GmbH. The form can be used separately from the test report. The written form with original stamp and original signature of the person authorized to sign shall be the legally binding form.

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1. Task specification

Air-borne sound insulation of a concrete member with breakthroughs (1 breakthrough per m²) was tested for the applicant Max Frank GmbH & Co. KG where the breakthroughs were sealed by several distance tube systems with plug of the applicant. The results shall be summarized in the following expert opinion.

2. Document

Test report PB 4.2/06-208 of MFPA Leipzig GmbH dated 23/10/2006

3. Test results

The sound insulation values given in Table 1 were determined:

Table 1: Test values of a concrete wall with several types of sealing

Test arrangement	Evaluated sound insulation value $R_w (C; C_{tr})$ in dB
Variant 0: Concrete member sealed 2 breakthroughs of 22 mm each sealed by concrete	57 (-1; -5)
Variant 1: Concrete member open 2 breakthroughs of 22 mm each	31 (-0; -0)
Variant 2: water-proof Distance tube systems with plug sealed at both sides by two 2 cm long plugs each.	57 (-2; -5)
Variant 3: sound-proof Distance tube systems with plug sealed at both sides by two 2 cm long plugs and one 4 cm long plug each	57 (-2; -5)
Variant 4: gas-proof Distance tube systems with plug sealed continuously by three 4 cm and four 2 cm long plugs each	57 (-2; -5)

4. Evaluation of sound insulation of distance tube systems with plug

The tests showed that a 200 mm thick monolithic concrete wall (variant 0) has the same sound insulation as a concrete wall sealed by distance tube systems with plug (variants 2 to 4). No reduction in the air-borne sound insulation of solid walls occurred.

Leipzig, 08/11/2006



Dr.-Ing. H.-J.-Teichert
Head of test laboratory



Sound reduction ISO 140-3:1995

Laboratory measurements of airborne sound insulation of building elements

Manufacturer Max Frank GmbH & Co. KG, 94339 Leiblfing

Client: Max Frank GmbH & Co. KG

Test specimen mounted by: MFPA Leipzig GmbH

Description of the specimen:

Two distance tube systems with plug installed in a 200 mm thick concrete wall with the dimensions 1985 mm x 985 mm

The distance tube systems each sealed by concrete.

Maximum insulation of test stand R_w , max = 62 dB

Size: 2 m²

Temperature [°C]: 20

Humidity [%]: 50

Source room Volume: 78,5 m³

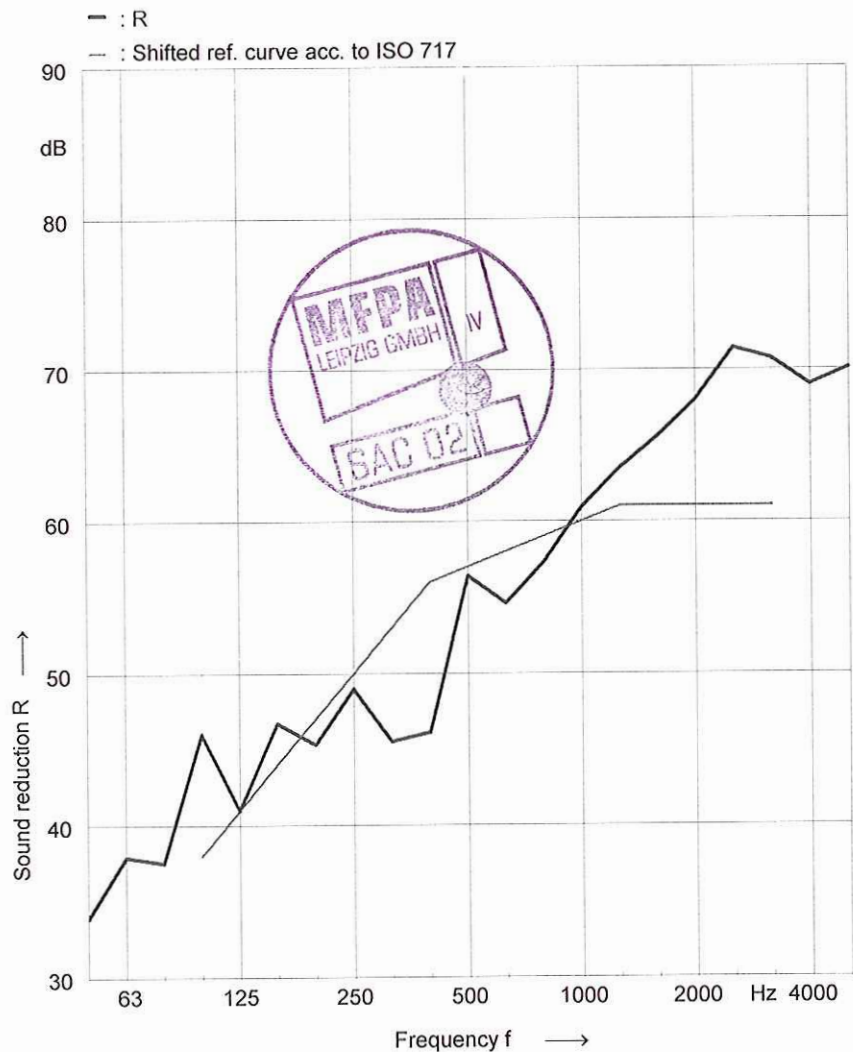
Receiving room Volume: 63,5 m³

Product identification: Concrete member sealed

Test room identification: Test room / Test room

Date of test: 11/10/2006

Frequency [Hz]	R 1/3 oct. [dB]
50	33,9
63	37,9
80	37,5
100	46,0
125	41,0
160	46,7
200	45,3
250	49,0
315	45,5
400	46,1
500	56,4
630	54,6
800	57,3
1000	60,9
1250	63,5
1600	65,6
2000	68,0
2500	71,4
3150	70,7
4000	69,0
5000	70,1



Rating according to ISO 717-1

$R_w(C, C_{tr}) = 57 (-1; -5)$ dB

$C_{50-3150} = -2$ dB

$C_{50-5000} = -1$ dB

$C_{100-5000} = 0$ dB

$C_{tr50-3150} = -7$ dB

$C_{tr50-5000} = -7$ dB

$C_{tr100-5000} = -5$ dB

Evaluation based on laboratory measurement results obtained by an engineering method

MFPA Leipzig GmbH

No. of test report: PB 4.2/06-208

Leipzig, 12/12/2006

Teichner
 Signature:



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