TFI Report 480237-01

Sound Absorption

Customer

IVC NV
Nijverheidslaan 29
8580 Avelgem
BELGIUM

Product

textile floor covering

Academic view

This report includes 2 pages and 1 annex(es)

Responsible at TFI

-Senior Engineer-
Dr.-Ing. Heike Kempf
Tel: +49 241 9679 171
h.kempf@tfi-online.de

Aachen, 12.03.2018

Dr. Alexander Siebel
- Head of the testing laboratory -

The present document is provided with an advanced electronic signature

1 Transaction

Test order	sound absorption according to EN ISO 354
Order date	05.02.2018
Your reference	S. Roose
Product designation	Academic view
TFI sample number	18-02-0015

2 Product Specification

Type of manufacture	tufted
Type of surface	loop pile
Backing	heavy backing
Pattern	tonal effect without pattern
Colour	grey, light grey, light brown
View	
Thickness [mm]	7.0*
Area density [g/m²]	4150*
Type of delivery	tiles
	*customer information

3 Results

Sound absorption	α_W = 0,20 ( )

4 Annexes

Sound absorption	SA 480237-01[a]

The annexes marked [a] are based on tests accredited in accordance with EN ISO/IEC 17025.

TFI Aachen GmbH
Charlottenburger Allee 41
52068 Aachen · Germany
www.tfi-online.de

HRB 8157 Aachen
VAT No. DE209411312
Managing Director
Dr.-Ing. Bayram Aslan

Annex SA - Sound Absorption Coefficient

1 Transaction

Product designation	Academic view
TFI sample number	18-02-0015
Testing period	19.02.2018

2 Test Method / Requirements

EN ISO 354:2003	Measurement of sound absorption in a reverberation room
EN ISO 11654:1997	Sound absorbers for use in buildings – Rating of sound absorption
Deviation from the standard	None

3 Remarks

None

4 Measuring Operation

Test noise:	broadband pink noise
Receive filter:	third octave band filter
Measurement:	2 loudspeaker positions
	6 microphone positions

5 Laboratories

Test rooms:	laboratory of the TFI Aachen GmbH, Hauptstr. 133, 52477 Alsdorf, Germany
Test method:	reverberation room method
Volume:	211 m³
Total surface:	213 m²
Floor plan:	trapezoidal
Reflectors:	6 aluminium plates 1.0 m x 2.0 m
	7 plywood boards 1.5 m x 1.3 m
	1 aluminium plate 1.8 m x 0.9 m

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6 Measuring Devices

Real time analyser:	Norsonic Nor140, SN: 1406926
Microphone:	Norsonic Type 1209/21134
Loudspeaker:	2 dodecahedrons

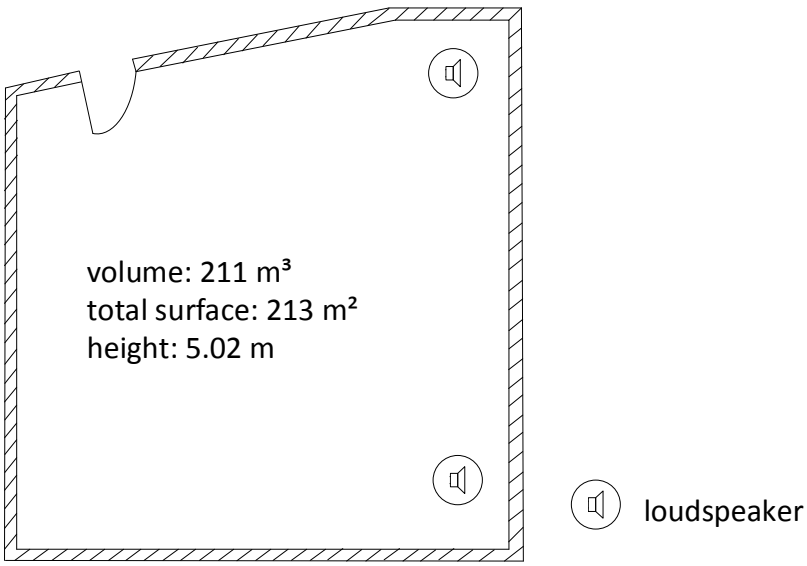
7 Evaluation

The decay curves are determined using the interrupted noise method. Several decay curves measured at one microphone and/or loudspeaker position are averaged in order to reach a sufficient reproducibility. The reverberation time of the room is expressed by the arithmetic mean derived from the total number of all reverberation time measurements in each frequency band.

The equivalent sound absorption area of the test specimen A_T is calculated as the difference between the equivalent sound absorption area of the reverberation room with test specimen A_2 and the equivalent sound absorption area of the empty reverberation room A_1 without test specimen.

The equivalent sound absorption coefficient α_s describes the ratio of the equivalent sound absorption area A_T of a test specimen divided by the area of the test specimen.

The evaluated sound absorption coefficient α_w is a single-number frequency-independent value which equals the value of the reference curve at 500 Hz after shifting it.



Drawing reverberation room

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Sound absorption according ISO 11654

SA 480237-01

Measurement of sound absorption coefficient in a reverberation room

Annex SA − Sound absorption

TFI sample no.: 18-02-0015
Construction: -
(from top to bottom)

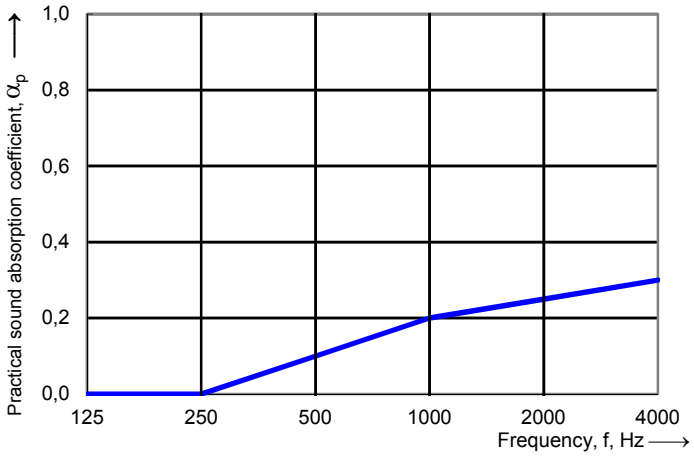
Testing period: 19.02.2018

Product name: Academic view

Reverberation room / without			Reverberation room / with sample		
Relative humidity:	35,6	%	Relative humidity:	35,6	%
Temperature:	19,5	°C	Temperature:	19,5	°C
Barometric pressure:	100,2	kPa	Barometric pressure:	100,2	kPa

Surface area:	12,00	m²
Room volume:	211,0	m³
Total room area St:	213	m²

Frequency f [Hz]	α_p Oktave
100 125 160	0,00
200 250 315	0,00
400 500 630	0,10
800 1000 1250	0,20
1600 2000 2500	0,25
3150 4000 5000	0,30



Weighted sound absorption coefficient according to ISO 11654

α_w = 0,20

Sound absorption according ISO 354

SA 480237-01

Measurement of sound absorption coefficient in a reverberation room

Annex SA − Sound absorption

Weighted sound absorption coefficient according to ISO 11654

α_w = 0,20

Surface area: 12,00 m²

Room volume: 211,0 m³

Total room area St: 213,0 m²

Frequency [Hz]	α_p	α_s	A [m²]	T1 [s]	T2 [s]
50		-0,01	-0,1	7,21	7,30
63	0,00	0,01	0,1	8,15	7,87
80		0,02	0,3	9,59	8,95
100		-0,02	-0,2	9,68	10,27
125	0,00	0,02	0,2	6,79	6,53
160		0,00	0,0	6,06	6,04
200		-0,01	-0,2	6,48	6,69
250	0,00	0,02	0,2	6,28	6,08
315		0,01	0,2	5,47	5,32
400		0,09	1,1	5,89	4,97
500	0,10	0,09	1,1	6,18	5,17
630		0,10	1,2	6,07	5,02
800		0,10	1,2	5,65	4,71
1000	0,20	0,16	1,9	5,31	4,10
1250		0,29	3,5	5,24	3,40
1600		0,29	3,5	4,82	3,22
2000	0,25	0,27	3,2	4,31	3,07
2500		0,26	3,1	3,56	2,68
3150		0,28	3,4	2,81	2,20
4000	0,30	0,29	3,5	2,16	1,77
5000		0,35	4,2	1,56	1,31

Reverberation room / without sample:

Relative humidity: 35,6 %

Temperature: 19,5 °C

Barometric pressure: 100,2 kPa

Reverberation room / with sample:

Relative humidity: 35,6 %

Temperature: 19,5 °C

Barometric pressure: 100,2 kPa

TFI sample number: 18-02-0015