

# TFI Report 491438-01

## Sound Absorption

### Customer

IVC Flooring Development Centre  
Textielstraat 24  
B-8580 Waregem  
BELGIUM

### Product

textile floor covering  
Full Shift

This report includes 2 pages and 1 annex

### Responsible at TFI

-Test Engineer-

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**Aachen, 09.12.2019**

Dr.-Ing. Bayram Aslan



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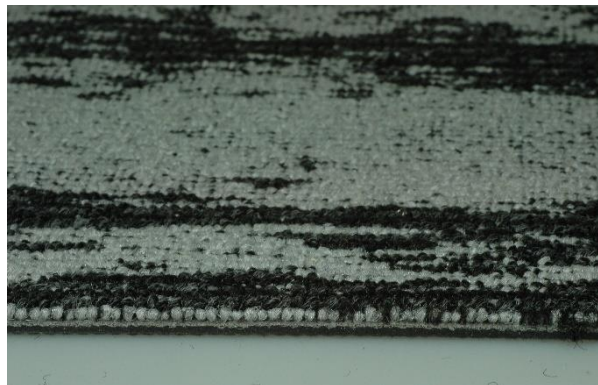
This report only applies to the tested samples and has been established to the best of our knowledge. Only the entire report shall be reproduced. Under no circumstances, extracts shall be used. Furthermore, we apply the "General Terms and Conditions for the Execution of Contracts" of the TFI Aachen GmbH, also with regard to the order execution.

## 1 Transaction

Test order	sound absorption according to EN ISO 354
Order date	18.11.2019
Your reference	Jeroom Van Lindt
Sampling performed by	Customer
Product designation	Full Shift
TFI sample number	19-11-0063

## 2 Product Specification

Type of manufacture	tufted
Type of surface	loop pile
Backing	heavy backing
Pattern	multicoloured, patterned
Colour	dark grey, light grey
View	



Thickness [mm]	4200*
Area density [g/m²]	7,0*
Type of delivery	tiles
	*customer information

## 3 Results

Sound absorption	$\alpha_w = 0,15$ (H)
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## 4 Annexes

Sound absorption	SA 491438-01 <sup>a</sup>
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The annexes marked <sup>a</sup> are based on tests accredited in accordance with EN ISO/IEC 17025.

# Annex SA - Sound Absorption

## 1 Transaction

Product designation	Full Shift
TFI sample number	19-11-0063
Testing period	02.12.2019

## 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

- The test was performed by a subcontractor accredited according to EN ISO/IEC 17025.
- The sides of the set-up were closed by tape
- Type A, the test object is attached directly to a room surface or applied to it

## 4 Measuring Operation

Test noise:	broadband noise
Receive filter:	third octave band filter
Measurement:	4 loudspeaker positions 3 microphone positions

## 5 Laboratories

Test rooms:	PEUTZ bv, Lindenlaan 41, 6584 AC Molenhoek (LB), The Netherlands
Test method:	reverberation room method
Volume:	214 m <sup>3</sup>
Total surface:	219 m <sup>2</sup>
Floor plan:	trapezoidal
Reflectors:	6 curved and 2 flat reflecting elements with a total area of approx. 13 m <sup>2</sup>

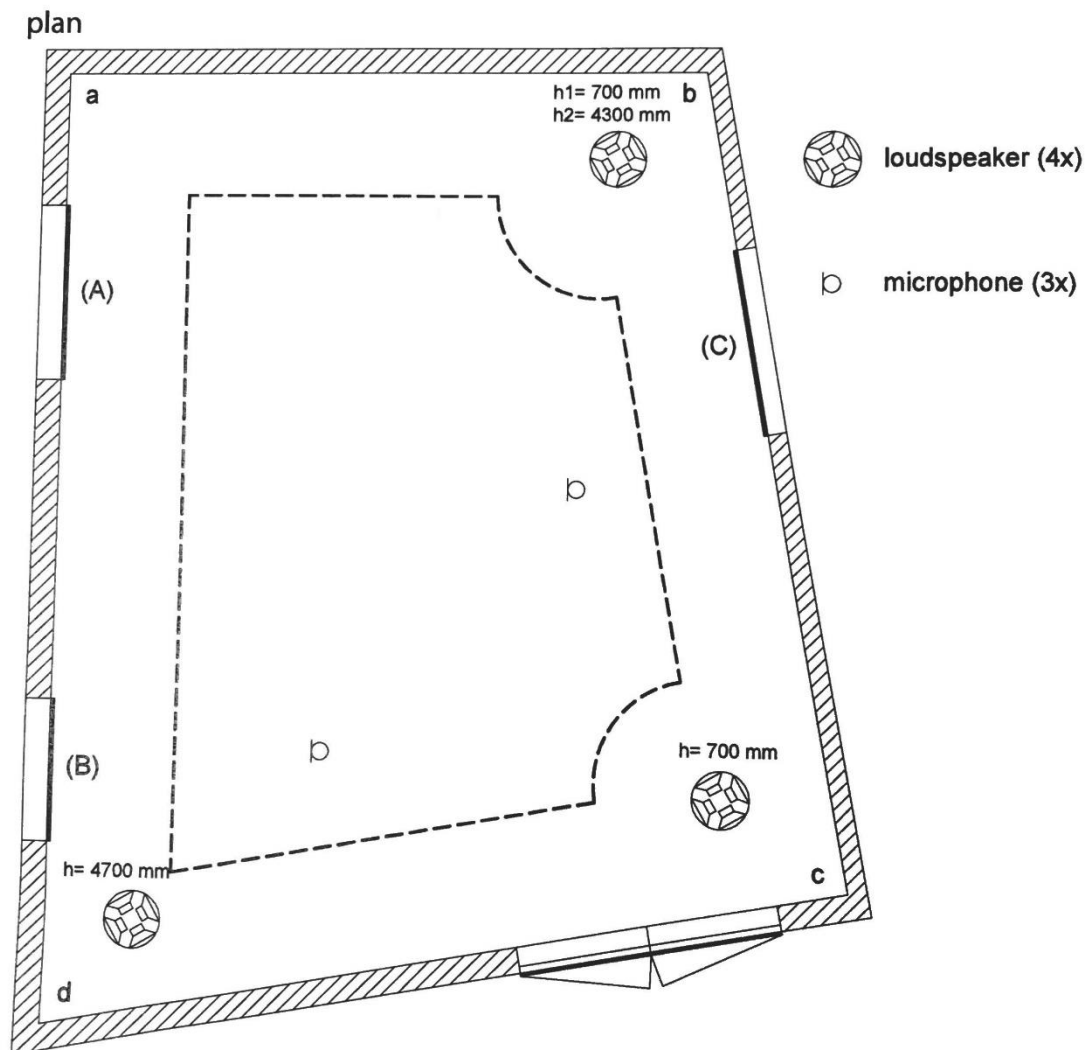
## 6 Evaluation

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  $\alpha_s$  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  $\alpha_w$  is a single-number frequency-independent value which equals the value of the reference curve at 500 Hz after shifting it.



Measurement of sound absorption coefficient in a reverberation room

Annex SA – Sound absorption

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TFI sample no.: 19-11-0063

Testing period: 02.12.2019

Construction:  
(from top to  
bottom)

Product name: Full Shift

Reverberation room / without sample:

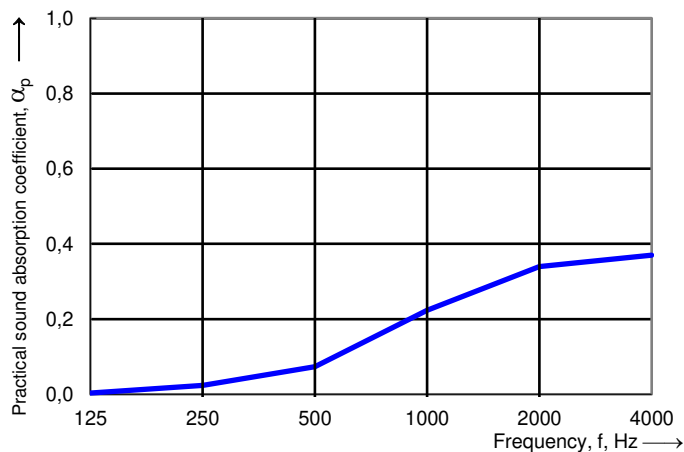
Relative humidity: 48,8 %  
Temperature: 15,3 °C  
Barometric pressure: 102,2 kPa

Reverberation room / with sample:

Relative humidity: 50,4 %  
Temperature: 16,1 °C  
Barometric pressure: 102,3 kPa

Surface area: 11,30 m<sup>2</sup>  
Room volume: 214,0 m<sup>3</sup>  
Total room area St: 219 m<sup>2</sup>

Frequency f [Hz]	$\alpha_p$ Oktave
100 125 160	0,00
200 250 315	0,02
400 500 630	0,07
800 1000 1250	0,22
1600 2000 2500	0,34
3150 4000 5000	0,37



Weighted sound absorption coefficient according to ISO 11654

$\alpha_w = 0,15(H)$

# Sound absorption according ISO 354

SA 491438-01

Measurement of sound absorption coefficient in a reverberation room

Annex SA – Sound absorption

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Weighted sound absorption coefficient according to ISO 11654

$$\alpha_w = 0,15(H)$$

Surface area: 11,30 m<sup>2</sup>Room volume: 214,0 m<sup>3</sup>Total room area St: 219,0 m<sup>2</sup>

Frequency [Hz]	$\alpha_p$	$\alpha_s$		T1 [s]	T2 [s]
50					
63					
80					
100		-0,01		9,48	9,83
125	0,00	0,01		8,65	8,32
160		0,01		8,00	7,82
200		0,02		8,17	7,83
250	0,02	0,02		7,11	6,78
315		0,03		6,67	6,20
400		0,06		7,15	6,24
500	0,07	0,07		7,16	6,08
630		0,09		7,14	5,83
800		0,14		7,13	5,41
1000	0,22	0,20		6,78	4,72
1250		0,33		6,16	3,71
1600		0,34		5,55	3,44
2000	0,34	0,33		4,91	3,24
2500		0,35		4,00	2,79
3150		0,34		3,36	2,49
4000	0,37	0,37		2,75	2,13
5000		0,40		2,13	1,73

Reverberation room / without sample:

Relative humidity: 48,8 %

Temperature: 15,3 °C

Barometric pressure: 102,2 kPa

Reverberation room / with sample:

Relative humidity: 50,4 %

Temperature: 16,1 °C

Barometric pressure: 102,3 kPa



TFI sample number: 19-11-0063