



Technical Note

Exploratory measurement of sound absorption coefficient for variable acoustic panel

Performed for Flex Acoustics ApS

TC-101192

Project no.: 117-36347

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04 January 2018

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Title

Exploratory measurement of sound absorption coefficient for variable acoustic panel

Journal no.

TC-101192

Project no.

117-36347

Our ref.

RSBS/DDR/ilk

Client

Flex Acoustics ApS
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1760 København V

Client ref.

Niels W. Adelman-Larsen

Summary

Exploratory Laboratory measurements of the sound absorption coefficient were carried out in a reverberation room according to the test method of EN ISO 354:2003.

Product: Acoustic variable module with 90 mm mineral wool with acoustic linen on both sides

Mounting depth: 400 mm

The measurements were carried out with the panel both in open and in closed condition.

The specimen was mounted as Type E-400 mounting on the concrete floor of the reverberation room.

The measurements were carried out in room 005 in building 355 at the Technical University of Denmark.

The test results per one-third octave and per octave are shown in tabular form and graphically on the graph sheets together with the weighted sound absorption coefficient α_w and the absorption class according to EN ISO 11654:1997.

Remark

The test results apply only to the objects tested.

Due to the size of the modules, 0,2 m² of the specimen was within 0,75 m of the edges of the room.

The measurements with and without the test specimen were not carried out the same day.

DELTA – a part of FORCE Technology, 04 January 2018



Rasmus Stahlfest Holck Skov
Acoustics & Vibration

Exploratory laboratory measurement of sound absorption coefficient in open condition according to EN ISO 354:2003

Client: Flex Acoustics ApS c/o Niels W. Adelman-Larsen

Date of test: 05 December 2017

Test specimen: Acoustic variable module in open condition, with 90 mm mineral wool with acoustic linen on both sides.

Module size: 2400 mm × 600 mm

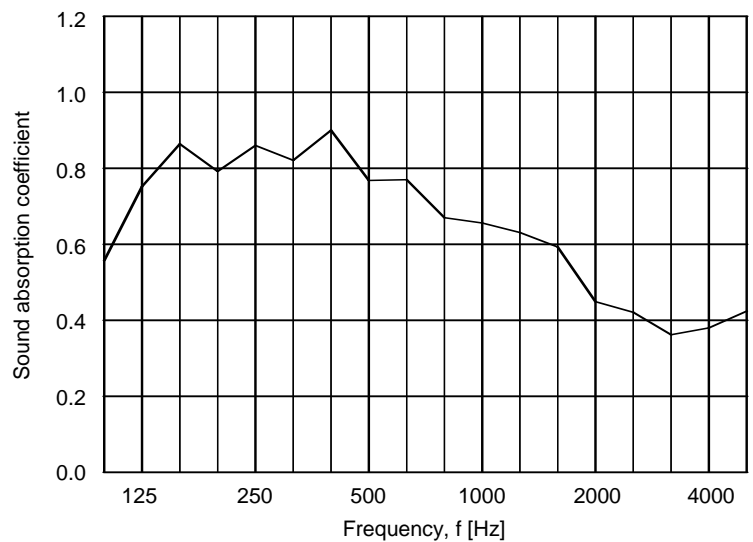
Mounting depth: 400 mm (Type E-400 mounting)

Test area: 10.1 m²

Room volume: 215 m³

Room surface: 305 m²

Frequency f [Hz]	α_s
50	0.30
63	0.43
80	0.42
100	0.56
125	0.75
160	0.86
200	0.79
250	0.86
315	0.82
400	0.90
500	0.77
630	0.77
800	0.67
1000	0.66
1250	0.63
1600	0.59
2000	0.45
2500	0.42
3150	0.36
4000	0.38
5000	0.42



Measurement results from exploratory measurements cannot be used as official documentation for product properties, as not all requirements for documentation measurements necessarily are fulfilled.

Exploratory laboratory measurement of sound absorption coefficient in open condition according to EN ISO 354:2003

Client: Flex Acoustics ApS c/o Niels W. Adelman-Larsen

Date of test: 05 December 2017

Test specimen: Acoustic variable module in open condition, with 90 mm mineral wool with acoustic linen on both sides

Module size: 2400 mm × 600 mm

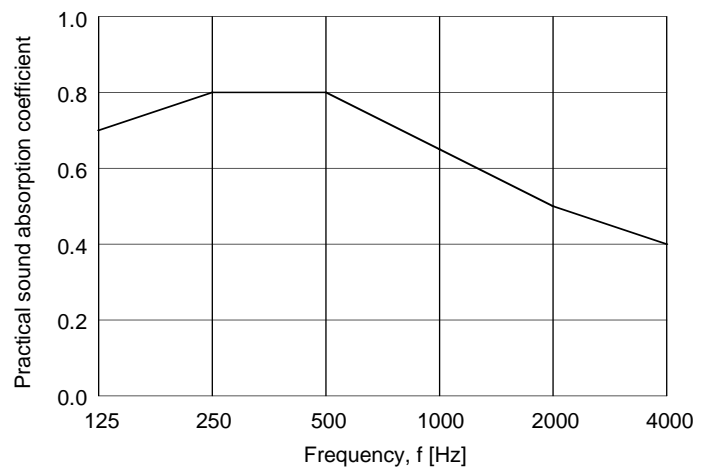
Mounting depth: 400 mm (Type E-400 mounting)

Test area: 10.1 m²

Room volume: 215 m³

Room surface: 305 m²

Frequency f [Hz]	α_p
63	0.40
125	0.70
250	0.80
500	0.80
1000	0.65
2000	0.50
4000	0.40



Practical sound absorption coefficient, weighted sound absorption coefficient, and absorption class according to EN ISO 11654:1997:

$\alpha_w = 0.55(\text{LM})$ Absorption class: D

Measurement results from exploratory measurements cannot be used as official documentation for product properties, as not all requirements for documentation measurements necessarily are fulfilled.

Exploratory laboratory measurement of sound absorption coefficient in closed condition according to EN ISO 354:2003

Client: Flex Acoustics ApS c/o Niels W. Adelman-Larsen

Date of test: 05 December 2017

Test specimen: Acoustic variable module in closed condition, with 90 mm mineral wool with acoustic linen on both sides.

Module size: 2400 mm × 600 mm

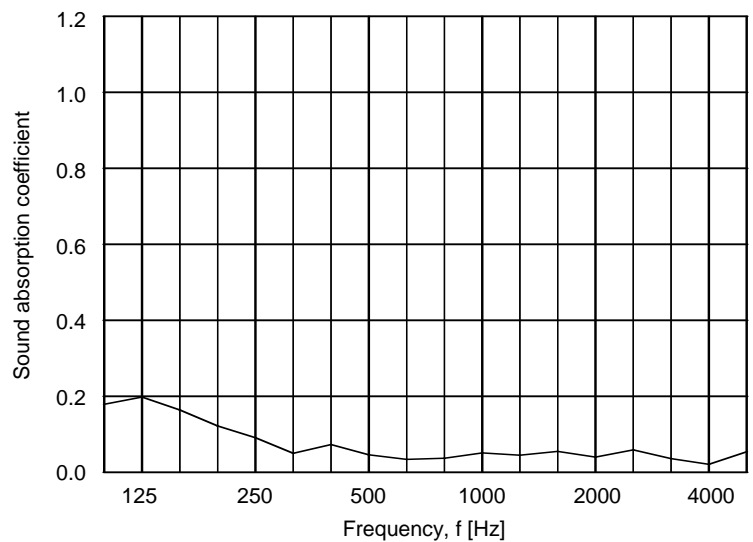
Mounting depth: 400 mm (Type E-400 mounting)

Test area: 10.1 m²

Room volume: 215 m³

Room surface: 305 m²

Frequency f [Hz]	α_s
50	-
63	0.09
80	-
100	0.18
125	0.20
160	0.16
200	0.12
250	0.09
315	0.05
400	0.07
500	0.05
630	0.03
800	0.04
1000	0.05
1250	0.04
1600	0.05
2000	0.04
2500	0.06
3150	0.04
4000	0.02
5000	0.05



Measurement results from exploratory measurements cannot be used as official documentation for product properties, as not all requirements for documentation measurements necessarily are fulfilled.

-: Indicates that no absorption was measurable.

Exploratory laboratory measurement of sound absorption coefficient in closed condition according to EN ISO 354:2003

Client: Flex Acoustics ApS c/o Niels W. Adelman-Larsen

Date of test: 05 December 2017

Test specimen: Acoustic variable module in closed condition, with 90 mm mineral wool with acoustic linen on both sides

Module size: 2400 mm × 600 mm

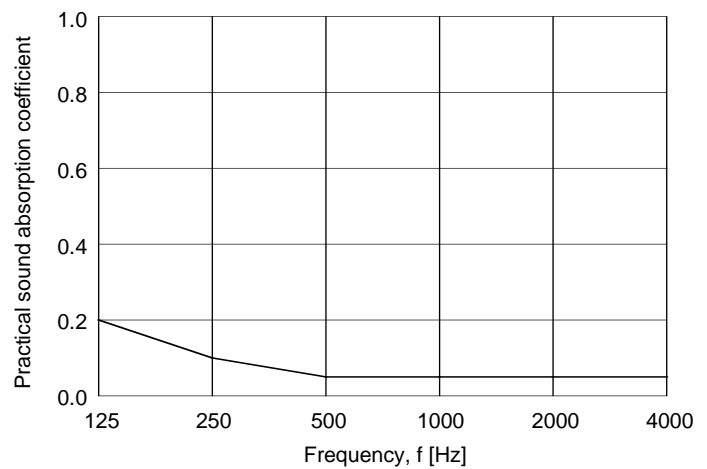
Mounting depth: 400 mm (Type E-400 mounting)

Test area: 10.1 m²

Room volume: 215 m³

Room surface: 305 m²

Frequency f [Hz]	α_p
63	0.00
125	0.20
250	0.10
500	0.05
1000	0.05
2000	0.05
4000	0.05



Practical sound absorption coefficient, weighted sound absorption coefficient, and absorption class according to EN ISO 11654:1997:

$\alpha_w = 0.05(L)$

Absorption class:

Measurement results from exploratory measurements cannot be used as official documentation for product properties, as not all requirements for documentation measurements necessarily are fulfilled.