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SOUND ABSORPTION MEASUREMENT FOR GÖTESSONS PLANT DIVIDER

The sound absorption for four versions of Plant divider from Götessons has been measured according to the reverberation room method, SS-EN ISO 354:2003, for sound absorption area and evaluated according to SS-ISO 20189:2019.

Plant divider is a room divider intended to include plants. The lower sides of the dividers include sound absorbers.

Figure 1: Product image of Plant Divider.

The measured practical sound absorption area for the tested objects and the N_{10}-value, as used by *Kammarkollegiet*, are presented in table 1 below.

Measurement protocol	Test object	Sound absorption area in frequency band (Hz)						N_{10}
		125	250	500	1000	2000	4000	
M1	Plant divider 800 mm Small	0.76	1.0	0.70	0.84	1.1	1.7	14
M2	Plant divider 1100 mm Small	0.98	1.2	1.1	1.3	1.6	2.5	9.1
M3	Plant divider 1100 mm Large	1.3	1.7	1.3	1.6	2.0	3.0	7.5
M4	Plant divider 800 mm Large	1.5	1.9	1.9	2.3	2.8	3.9	5.2

Table 1: Summary of the results as practical absorption area as described in SS-ISO 20189:2019 and as N_{10}-value as used by Kammarkollegiet.

1 CLIENT

Götessons Industri AB, Rönnåsgatan 5B, 523 38, Ulricehamn, Sweden
Contact: Emilia Anderö, 0321-68 77 36, emilia.andero@gotessons.se

2 ASSIGNMENT

To measure the sound absorption area for the product Plant Divider SS-EN ISO 354:2003 and evaluate according to SS-ISO 20189:2019.

3 TEST OBJECTS

Plant Divider is a room divider intended to include plants in the upper part which consists of a wood fibre board box. The lower part consists a wooden frame with sound absorbers. The complete object is covered with fabric. Four different sizes were measured – height 800 and 1100 mm and length 820 and 1620 mm. The objects were measured with a 5 cm distance to the floor to emulate the wheels that are normally used.

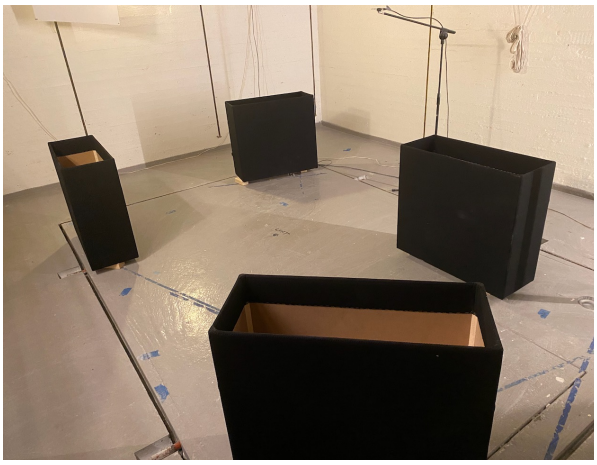


Figure 2: Four Plant Divider 800 mm Small.

Figure 3: Three Plant Divider 1100 mm Small.

Figure 4: Two Plant Divider 800 mm Large.

Figure 5: Two Plant Divider 1100 mm Large.

4 MEASUREMENT PROCEDURE

The absorption measurements were performed according to the standard SS-EN ISO 354:2003. The measurements were made with three speaker positions and four microphone positions. The results for sound absorption area were evaluated according to SS-ISO 20189:2019 (Swedish approval of ISO 20189:2018).

The measurements were performed by Johan Jernstedt 2026-04-09 in Akustikverkstan's reverberation room in Skultorp, Skövde, Sweden. More information on the test facilities can be found in Appendix 2.

The equipment used is presented in Appendix 3.

5 RESULTS

Detailed measurement results are available in the measurement protocol belonging to this report, 4915-M1 to M4. The results are only valid for the tested samples. The measurement accuracy is described in Appendix 4.

This report should always be used in its complete context, even though the measurement protocol may be used independently.

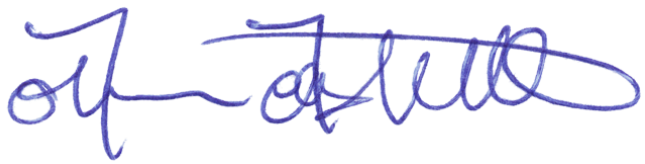
6 COMMENTS AND INTERPRETATIONS

6.1 N_{10}-value

The N_{10} value is a comparative value that applies to acoustic products with sound absorbing properties. *Kammarkollegiet*, the Swedish authority dealing with public purchasing, uses the value in their advice regarding purchasing of sound absorbers. The N_{10} value is developed to be a single value metric for speech sound absorption and describes how many objects are needed to obtain 10 m^2 of sound absorption area in the 500 Hz octave band. The N_{10} value is calculated with the formula:

$$N_{10} = \frac{10}{A_{dim}}$$

A_{dim} is the average sound absorption area of the three 1/3 octave bands in the 500 Hz octave band. If the sound absorption is lower in any octave above 500 Hz, the lower value will be used instead.



Johan Jernstedt

Reviewed by Joachim Schubert, 2026-04-22

APPENDIX 1: MEASURED REVERBERATION TIMES

f(Hz)	Empty	Plant divider 800x820x320	Plant divider 1100x820x320	Plant divider 800x1620x320	Plant divider 1100x1620x320
50	7.38	5.94	5.38	5.65	5.19
63	7.97	6.41	6.00	6.12	5.62
80	7.83	5.74	5.65	5.42	5.02
100	7.36	5.06	5.23	5.24	4.89
125	6.71	4.29	4.29	4.72	4.22
160	5.41	3.12	3.16	3.34	3.24
200	5.60	3.02	3.49	3.38	3.64
250	5.33	3.35	3.36	3.40	3.17
315	5.57	3.42	3.39	3.66	3.31
400	5.26	3.67	3.39	3.70	3.29
500	4.88	3.44	3.30	3.51	3.12
630	4.46	3.19	3.11	3.24	2.88
800	4.79	3.29	3.11	3.32	2.94
1000	4.72	3.17	3.03	3.23	2.85
1250	4.18	2.86	2.72	2.95	2.59
1600	3.77	2.62	2.48	2.61	2.33
2000	3.35	2.30	2.22	2.30	2.07
2500	2.99	2.04	1.92	2.04	1.85
3150	2.47	1.69	1.59	1.68	1.53
4000	2.04	1.40	1.35	1.38	1.30
5000	1.67	1.16	1.11	1.14	1.08

Number of objects	0	4	3	2	2
Temperature (°C)	18	17	17	17	17
RH (%)	48	46	43	40	41

APPENDIX 2: INFORMATION ABOUT THE REVERBERATION ROOM

The reverberation room is rectangular, measuring Length x Width x Height = 5.85 x 4.65 x 7.35 m. The room volume is 200 m^3 and the total area of the walls, ceiling and floor is 209 m^2. There are 22 diffusors (size 0.775 x 1.25 m) randomly installed in the room. The reverberation time between 50 and 200 Hz is controlled with membrane absorbers on the walls.
The test objects were placed on the floor on the mounting area (10 m^2, 2.6 x 3.85 m) according to figure A2.1. The mounting area consists of a concrete slab that can be lowered up to 700 mm below the floor.

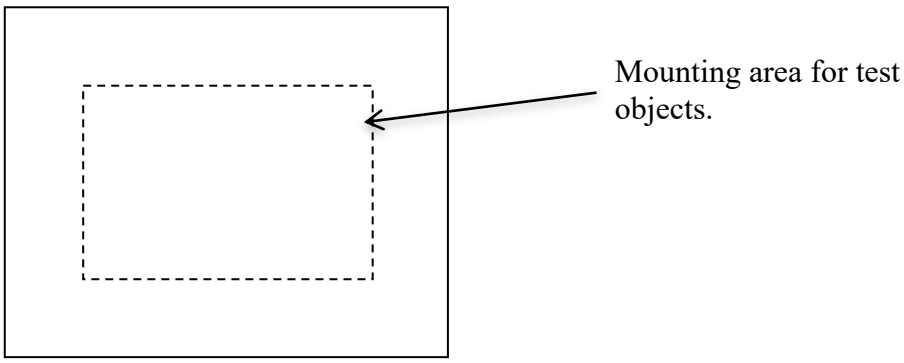


Figure A2.1: Plane drawing of the reverberation room with the mounting area.

APPENDIX 3: MEASUREMENT EQUIPMENT

Table A3.1 lists the equipment used during the measurements. The equipment fulfils class 1 according to SS-EN 61672-1, 60942 and 61260. Date for the latest calibration is available in the instrument journal of Akustikverkstan.

Instrument	Manufacture and type	Serial number	Internal designation
Measurement computer	HP Zbook		DA02
Front end	National Instruments NI 9234	1918620/190DB0B	AN05
Microphone	Roga MI-17	592	MI04
Microphone	Roga MI-17	3186	MI31
Microphone	Roga MI-17	594	MI06
Microphone	Roga MI-17	595	MI07
Speaker	IMA Kub 1	8	HÖ7
Speaker	IMA Kub 1	9	HÖ8
Speaker	IMA Kub 1	10	HÖ9
Equalizer	Monacor MEQ-2152	-	Lab
Amplifier	Denon POA-2200	-	Lab

Table A3.1: Equipment used during the measurements.

APPENDIX 4: MEASUREMENT UNCERTAINTY

The uncertainties in the measured sound absorption coefficients for office screens have been estimated to the values in table A4.1. The uncertainty corresponds to one standard deviation.

50 Hz	**63 Hz**	**80 Hz**	**100 Hz**	**125 Hz**	**160 Hz**	**200 Hz**
± 0.05	± 0.05	± 0.05	± 0.05	± 0.05	± 0.04	± 0.04
250 Hz	**315 Hz**	**400 Hz**	**500 Hz**	**630 Hz**	**800 Hz**	**1 kHz**
± 0.04	± 0.03	± 0.03	± 0.03	± 0.03	± 0.03	± 0.03
1.25 kHz	**1.6 kHz**	**2 kHz**	**2.5 kHz**	**3.15 kHz**	**4 kHz**	**5 kHz**
± 0.03	± 0.03	± 0.03	± 0.03	± 0.04	± 0.04	± 0.05

Table A4.1: Measurement uncertainty for each third octave.

The uncertainty in sound absorption area can be derived from the uncertainty above multiplied by the exposed area of the evaluated test object.

The N_{10}-value has a standard deviation of +/- 2 %.

Plant divider 800 mm Small

SOUND ABSORPTION AREA ACCORDING TO SS-EN ISO 354:2003 and ISO 20189:2018

Measurement of sound absorption area in a reverberation room

Ackred. nr. 10445
Provning
ISO/IEC 17025

Report number:
4915-M1
Date
2026-04-23

Frequency f [Hz]	Sound absorption area per object [m^2 Sabine]	
50	0.27	
63	0.25	0.30
80	0.38	
100	0.50	
125	0.68	0.76
160	1.10	
200	1.24	
250	0.91	1.0
315	0.92	
400	0.67	
500	0.70	0.70
630	0.73	
800	0.78	
1000	0.84	0.84
1250	0.90	
1600	0.93	
2000	1.08	1.1
2500	1.23	
3150	1.45	
4000	1.68	1.7
5000	1.92	

N_{10} = 14

Client: Götessons Industri AB

Manufacturer: Götessons Industri AB

Product identification: Plant divider 800 mm Small

Description of test specimen: Plant divider (800x820x320 mm) based on a wooden frame covered with fabric. The upper part is a wood fibre board box and the lower part contains sound absorbing panels.

Reverberation room volume: 200 m^3

Temperature: 17.0 °C (empty: 18.0 °C)

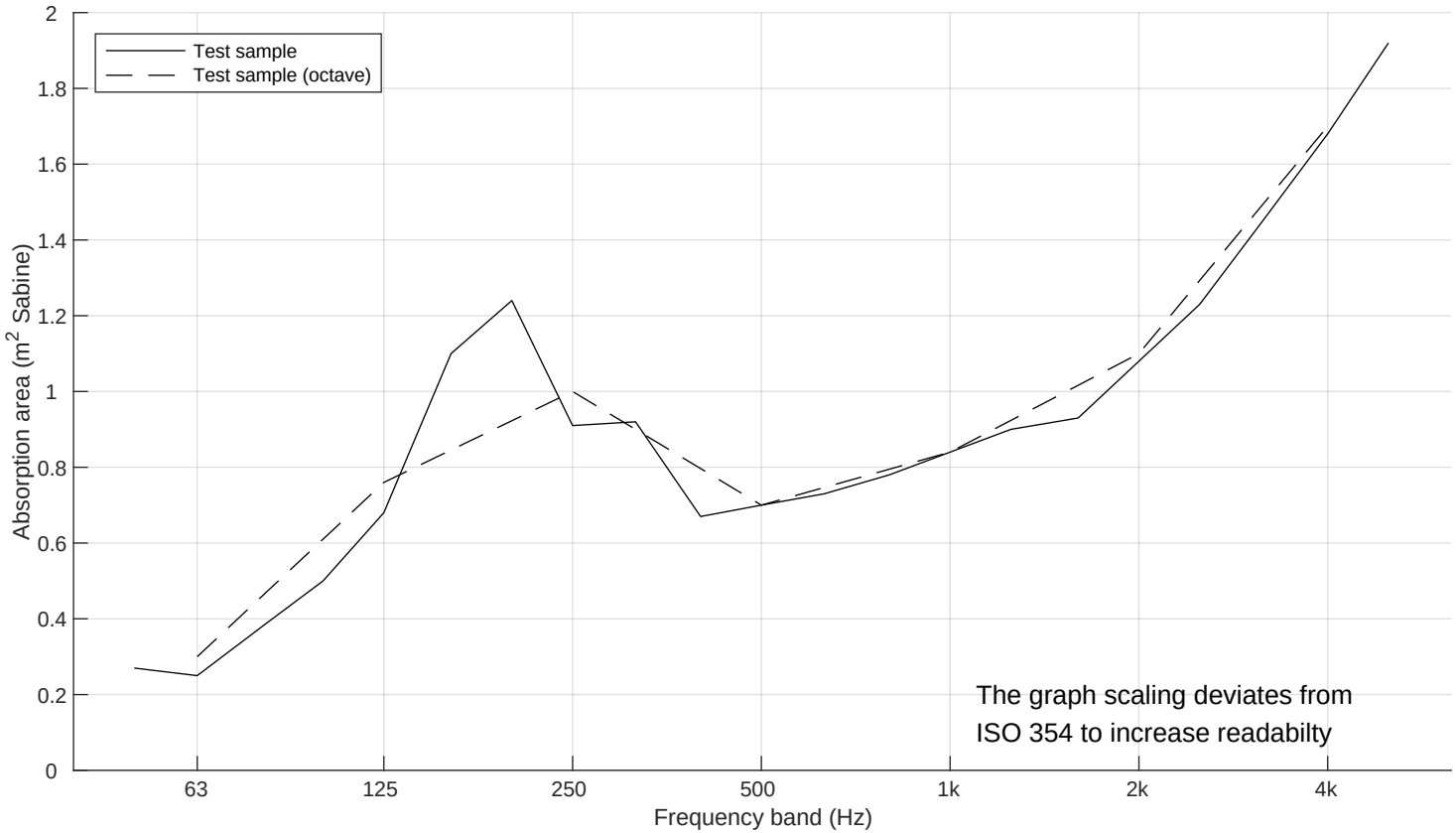
Air humidity: 46 % (empty: 48 %)

Air pressure: 103.0 kPa (empty:103.1 kPa)

Number of objects: 4

Measurement date: 2026-04-09

Measured by: Johan Jernstedt



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RT20260409_1248_Tom_lunch.mat
RT20260409_1359_Plant_divider_800x820x320.mat

Plant divider 1100 mm Small

SOUND ABSORPTION AREA ACCORDING TO SS-EN ISO 354:2003 and ISO 20189:2018

Measurement of sound absorption area in a reverberation room

Ackred. nr. 10445
Provning
ISO/IEC 17025

Report number:
4915-M2
Date
2026-04-23

Frequency f [Hz]	Sound absorption area per object [m^2 Sabine]	
50	0.55	
63	0.45	0.51
80	0.53	
100	0.60	
125	0.91	0.98
160	1.42	
200	1.17	
250	1.19	1.2
315	1.26	
400	1.15	
500	1.07	1.1
630	1.07	
800	1.23	
1000	1.28	1.3
1250	1.38	
1600	1.45	
2000	1.58	1.6
2500	1.91	
3150	2.22	
4000	2.42	2.5
5000	2.77	

N_{10} = 9.1

Client: Götessons Industri AB

Manufacturer: Götessons Industri AB

Product identification: Plant divider 1100 mm Small

Description of test specimen: Plant divider (1100x820x320 mm) based on a wooden frame covered with fabric. The upper part is a wood fibre board box and the lower part contains sound absorbing panels.

Reverberation room volume: 200 m^3

Temperature: 17.0 °C (empty: 18.0 °C)

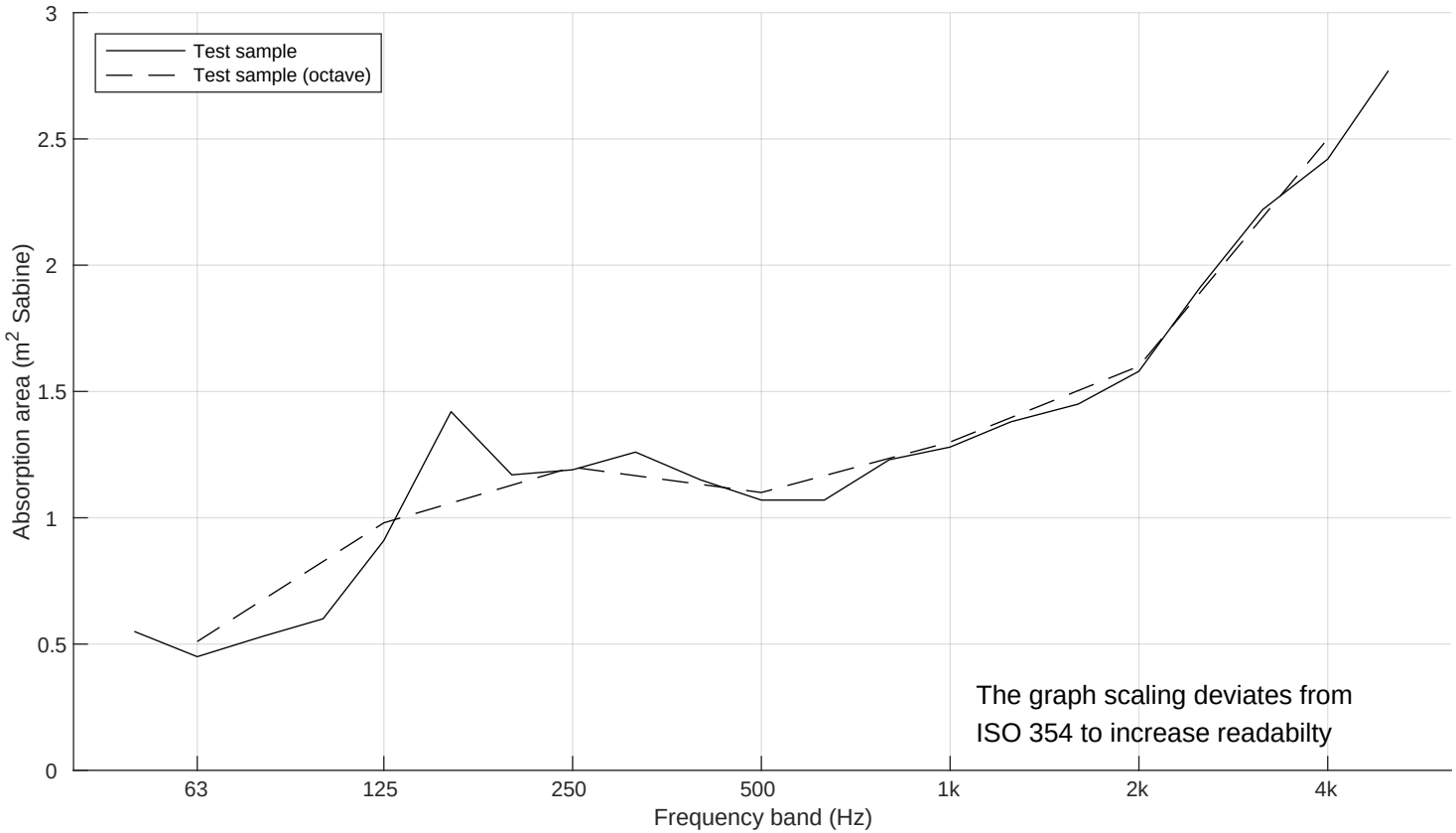
Air humidity: 43 % (empty: 48 %)

Air pressure: 103.0 kPa (empty:103.1 kPa)

Number of objects: 3

Measurement date: 2026-04-09

Measured by: Johan Jernstedt



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RT20260409_1248_Tom_lunch.mat
RT20260409_1423_Plant_divider_1100x820x320.mat

Plant divider 800 mm Large

SOUND ABSORPTION AREA ACCORDING TO SS-EN ISO 354:2003 and ISO 20189:2018

Measurement of sound absorption area in a reverberation room

Ackred. nr. 10445
Provning
ISO/IEC 17025

Report number:
4915-M3
Date
2026-04-23

Frequency f [Hz]	Sound absorption area per object [m^2 Sabine]	
50	0.68	
63	0.62	0.74
80	0.92	
100	0.89	
125	1.01	1.3
160	1.85	
200	1.91	
250	1.73	1.7
315	1.53	
400	1.32	
500	1.31	1.3
630	1.39	
800	1.51	
1000	1.57	1.6
1250	1.59	
1600	1.82	
2000	2.05	2.0
2500	2.23	
3150	2.61	
4000	3.07	3.0
5000	3.38	

N_{10} = 7.5

Client: Götessons Industri AB

Manufacturer: Götessons Industri AB

Product identification: Plant divider 800 mm Large

Description of test specimen: Plant divider (800x1620x320 mm) based on a wooden frame covered with fabric. The upper part is a wood fibre board box and the lower part contains sound absorbing panels.

Reverberation room volume: 200 m^3

Temperature: 17.0 °C (empty: 18.0 °C)

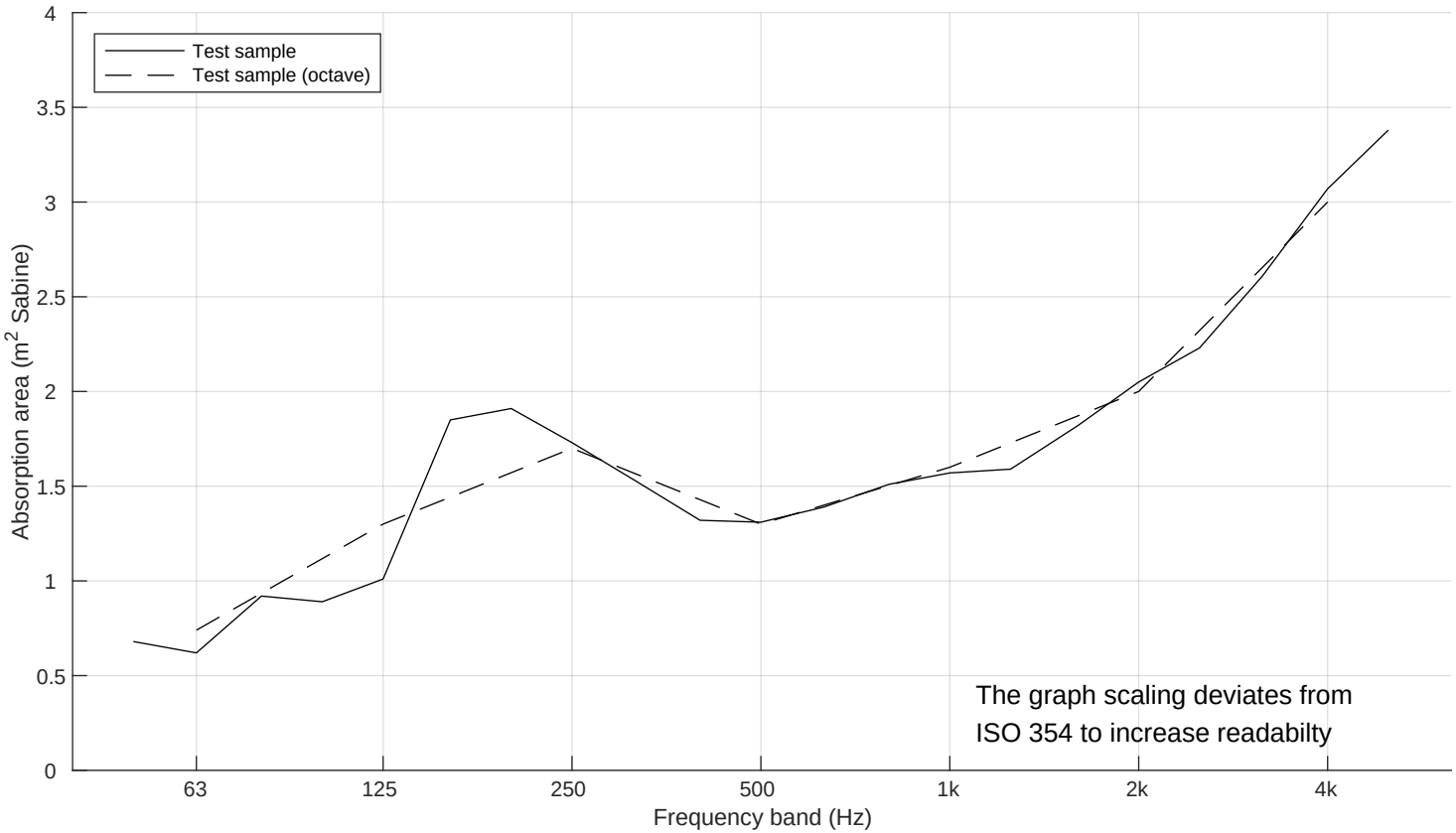
Air humidity: 40 % (empty: 48 %)

Air pressure: 103.0 kPa (empty:103.1 kPa)

Number of objects: 2

Measurement date: 2026-04-09

Measured by: Johan Jernstedt



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RT20260409_1457_Plant_divider_800x1620x320.mat

Plant divider 1100 mm Large

SOUND ABSORPTION AREA ACCORDING TO SS-EN ISO 354:2003 and ISO 20189:2018

Measurement of sound absorption area in a reverberation room

Ackred. nr. 10445 Provning ISO/IEC 17025

Report number: 4915-M4

Date 2026-04-23

Frequency f [Hz]	Sound absorption area per object [m² Sabine]	
50	0.93	
63	0.85	0.98
80	1.16	
100	1.11	
125	1.43	1.5
160	2.01	
200	1.56	
250	2.08	1.9
315	2.00	
400	1.86	
500	1.89	1.9
630	2.02	
800	2.14	
1000	2.25	2.3
1250	2.36	
1600	2.57	
2000	2.85	2.8
2500	3.11	
3150	3.63	
4000	3.90	3.9
5000	4.25	

N_{10} = 5.2

Client: Götessons Industri AB

Manufacturer: Götessons Industri AB

Product identification: Plant divider 1100 mm Large

Description of test specimen: Plant divider (1100x1620x320 mm) based on a wooden frame covered with fabric. The upper part is a wood fibre board box and the lower part contains sound absorbing panels.

Reverberation room volume: 200 m³

Temperature: 17.0 °C (empty: 18.0 °C)

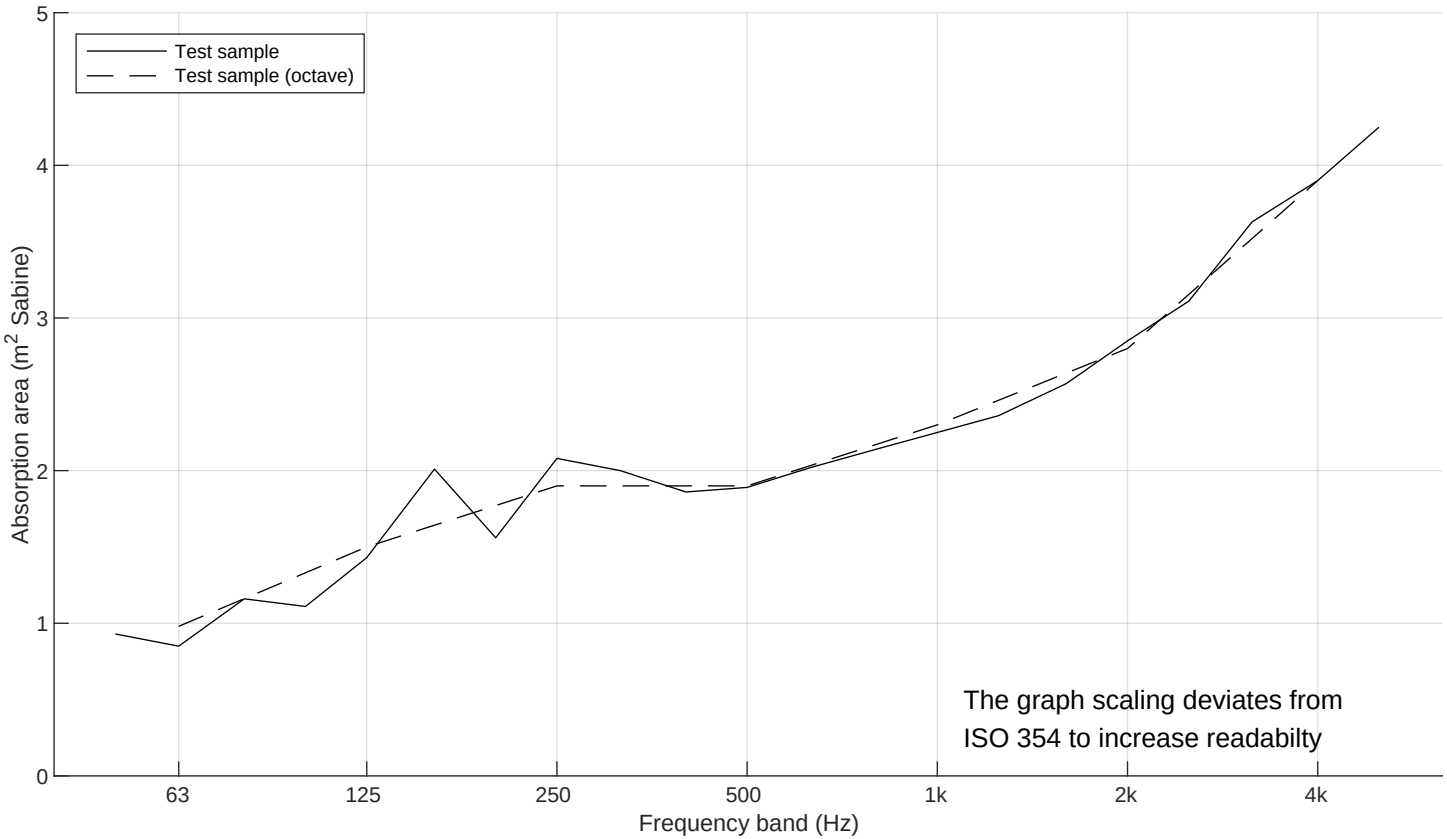
Air humidity: 41 % (empty: 48 %)

Air pressure: 103.0 kPa (empty:103.1 kPa)

Number of objects: 2

Measurement date: 2026-04-09

Measured by: Johan Jernstedt



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RT20260409_1248_Tom_lunch.mat
RT20260409_1441_Plant_divider_1100x1620x320.mat