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TEST

INSTITUT IGH, d.d.
Laboratorij za građevinsku fiziku
Building Physics Laboratory
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www.igh.hr

RN 62570888 Zagreb, 2025-02-07

TEST REPORT AND ASSESSMENT OF PERFORMANCE BASED ON TESTING No. EN-72570/005/25-004/25

(based on sampling carried out by the manufacturer)

Client:	SONITUS d.o.o., Krešimirova 71, HR-48000 Koprivnica
Offer::	Offer No. 72570-0-0934/23 dated on 2023-07-27
Building product:	absorber Sonitus Acoustics Archwood
Manufacturer:	SONITUS d.o.o., Krešimirova 71, HR-48000 Koprivnica
Date of receipt of the sample:	2025-01-31
Laboratory sample No.:	LGF 008/25
Place of testing:	INSTITUT IGH, d.d., Materials and Structures Department, IGH Laboratory, Building Physics Laboratory, Janka Rakuše 1, HR-10000 Zagreb, Croatia
Tested property:	Sound absorption
Decision No.:	KLASA: UP/I-360-01/20-08/37, URBROJ: 531-04-2-1-2-21-10 dated on 2021-04-15

Responsible person: Head of the Building Physics Laboratory

Tomislav Vuić, univ. spec. aedif. dr. sc. Mladen Bezjak, dipl. ing. stroj.

Institut IGH d.d. is a notified body of the European Commission for the testing noise absorption of products used in civil engineering with the number: NB 2477 in the NANDO database.

Test results refer only to the tested specimens. Partial copying of this report is not permitted without a written authorization of the Head of the Laboratory. No. of text pages: 6, included annexes: 0.

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Test report No.: EN-72570/005/25-004/25

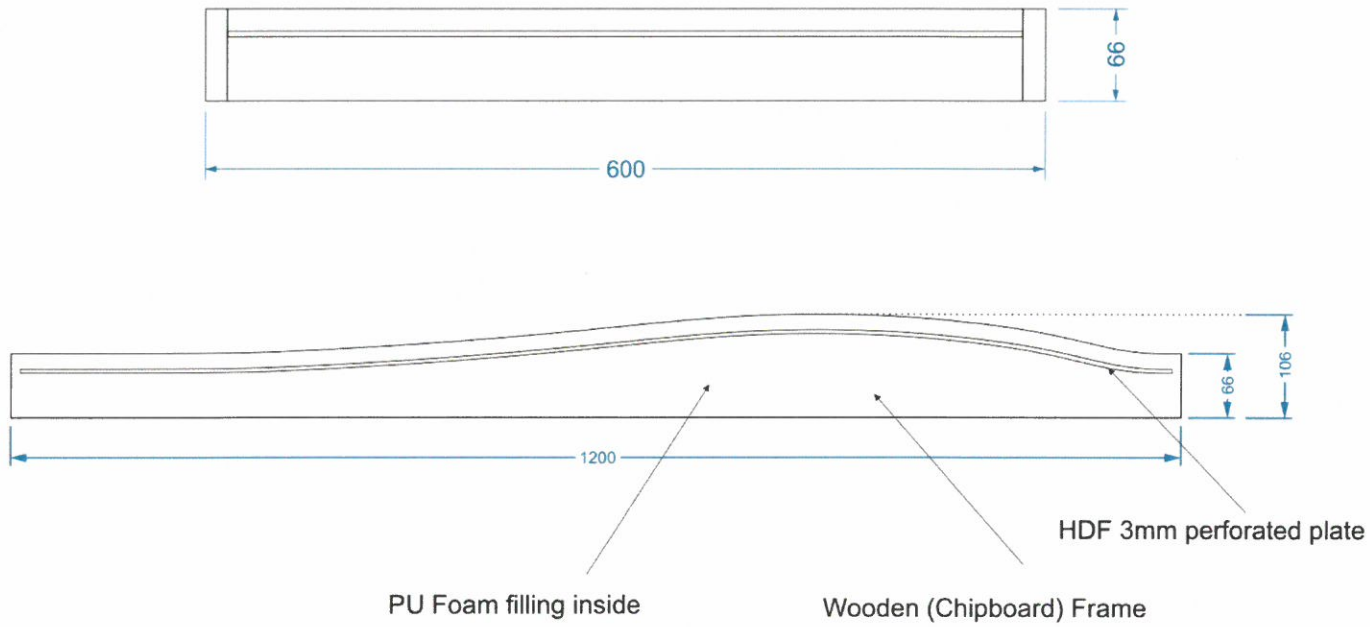
Task: Sound absorption testing of samples delivered by the manufacturer.

Testing standard: HRN EN ISO 354:2004 – Acoustics -- Measurement of sound absorption in a reverberation room (ISO 354:2003; EN ISO 354:2003)

Evaluating standard: HRN EN ISO 11654:1998 – Acoustics -- Sound absorbers for use in buildings – Rating of sound absorption (ISO 11654:1997; EN ISO 11654:1997)

Description of tests samples (information provided by the client):

Sonitus Acoustics Archwood



Materials :
- 18mm Chipboard
- 3mm HDF laminated and perforated
- PU Foam

Test sample, absorber Sonitus Acoustics Archwood, with nominal dimensions: 1200 mm x 600 mm, thickness: 66/106 mm, were tested (photo 1 and 2).

Measured mass of the Sonitus Acoustics Archwood absorber per piece: 6,16 kg.

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Photo 1

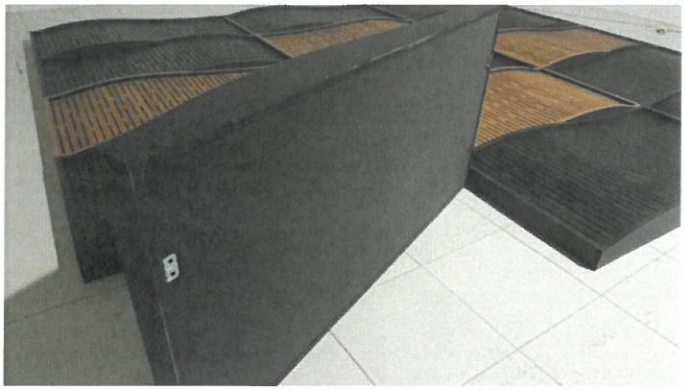
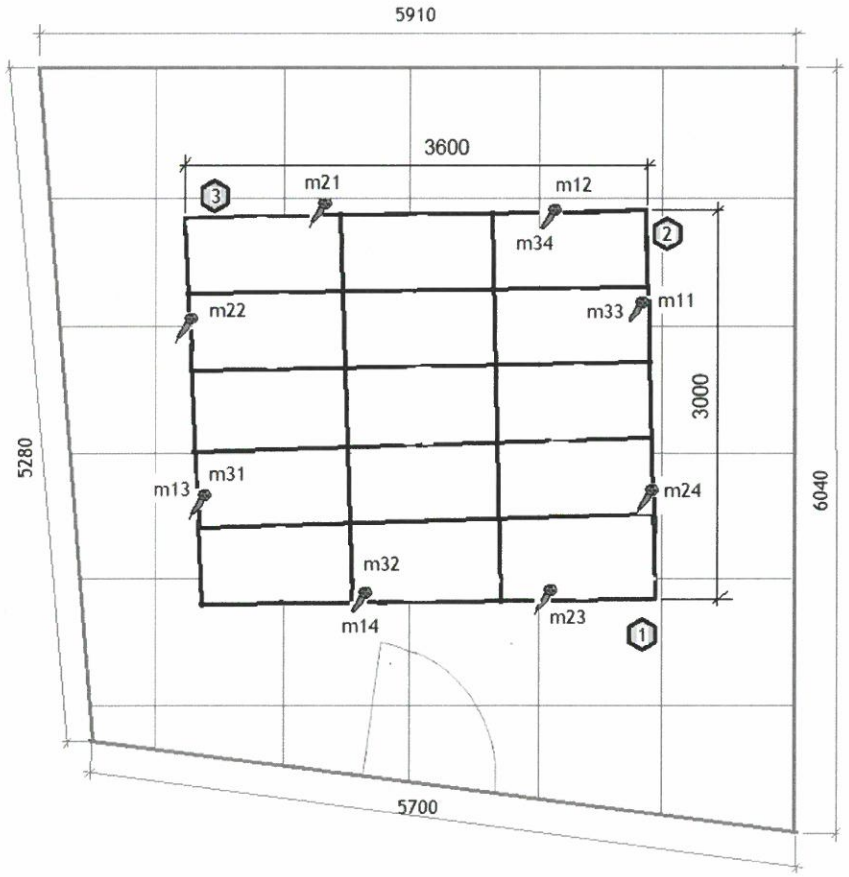


Photo 2

Installation method of test samples:

For measuring sound absorption of Sonitus Acoustics Archwood, 15 pieces of absorber, dimensions: 1200 mm x 600 mm, were placed on the floor of the reverberation room and formed a surface of 10,80 m^2 (Sketch 1).

Lateral surfaces of the Sonitus Acoustics Archwood absorbers are not included in the absorption surface (photos 3 and 4).



Sketch 1

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Photo 3



Photo 4

Description of a reverberation room:

- volume: 194,8 m^3,
- area: floor 32,65 m^2, ceiling: 32,65 m^2, walls: 136,77 m^2,
- diffusers: pieces 8, total area: 30,17 m^2.

Test conditions:

- number of microphone positions: 12 (m11... m34),
- number of loudspeaker positions: 3,
- number of averaging on individual position microphone/ loudspeaker: 3.

Measuring and testing equipment:

- hand-held analyzer, type 2270 (Dual Channel), Bruel & Kjær, serial number: 2679276,
- sound pressure calibrator, type 4231, Bruel & Kjær, serial number: 3023871,
- thermohygrometer, ROTRONIC, type Hygroclip S, laboratory mark 1680, serial number: 23535 011,
- condenser microphone, type 4189, Bruel & Kjær, serial number: 2670475,
- preamplifier, type ZC 0026, Bruel & Kjær, serial number: 2877,
- power amplifier, type 2716, Bruel & Kjær, serial number: 2486522,
- sound source, type 4296, Bruel & Kjær, serial number: 2485310,
- barometer, serial number: 225558, laboratory mark 1135.

Test results:

The sound absorption coefficient (α_S) and partical sound absorption coefficient (α_p) of tested samples as a function of frequency is shown in table and diagram. In presenting the results, the following symbols are used:

f – centre frequency of the one-third-octave band (Hz),
α_S – sound absorption coefficient,
α_p– partical sound absorption coefficient (for each octave band),
T_1 – reverberation time of the empty reverberation room (s),
T_2 – reverberation time of the reverberation room with test samples (s),
α_W – weighted sound absorption coefficient.

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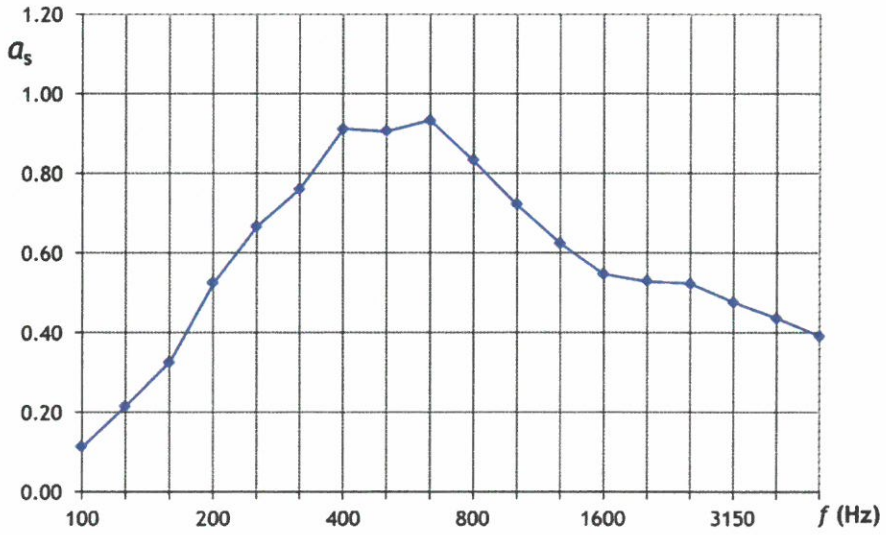
Test report No.: EN-72570/005/25-004/25

Results of sound absorption measurements

Client: SONITUS d.o.o., Krešimirova 71, HR-48000 Koprivnica
Manufacturer: SONITUS d.o.o., Krešimirova 71, HR-48000 Koprivnica
Building product: **absorber Sonitus Acoustics Archwood**
Laboratory sample No.: LGF 008/25
Measuring assembly made by: laboratory staff
Area of test samples: S = 10,80 m^2
Volume of the reverberation room: V = 194,8 m^3

Frequency f (Hz)	Reverberation time of empty reverberation room T_1 (s)	Reverberation time of reverberation room with test samples T_2 (s)	Sound absorption coefficient α_S	Climatic conditions
100	16.00	9.87	0.11	2025-01-31 in the empty reverberation room 21,7 °C, 32,5 % rH 101,6 kPa
125	12.18	6.40	0.22	
160	11.30	4.98	0.33	
200	9.86	3.54	0.53	
250	9.37	2.97	0.67	
315	8.82	2.66	0.76	
400	8.59	2.32	0.91	
500	9.02	2.36	0.91	
630	8.30	2.26	0.93	
800	7.85	2.41	0.83	2025-01-31 in the reverberation room with test samples 21,7 °C, 34,2 % rH 101,6 kPa
1000	7.47	2.61	0.72	
1250	6.85	2.77	0.62	
1600	5.99	2.82	0.55	
2000	5.23	2.69	0.53	
2500	4.39	2.47	0.52	
3150	3.47	2.24	0.48	
4000	2.63	1.92	0.44	
5000	1.98	1.60	0.39	

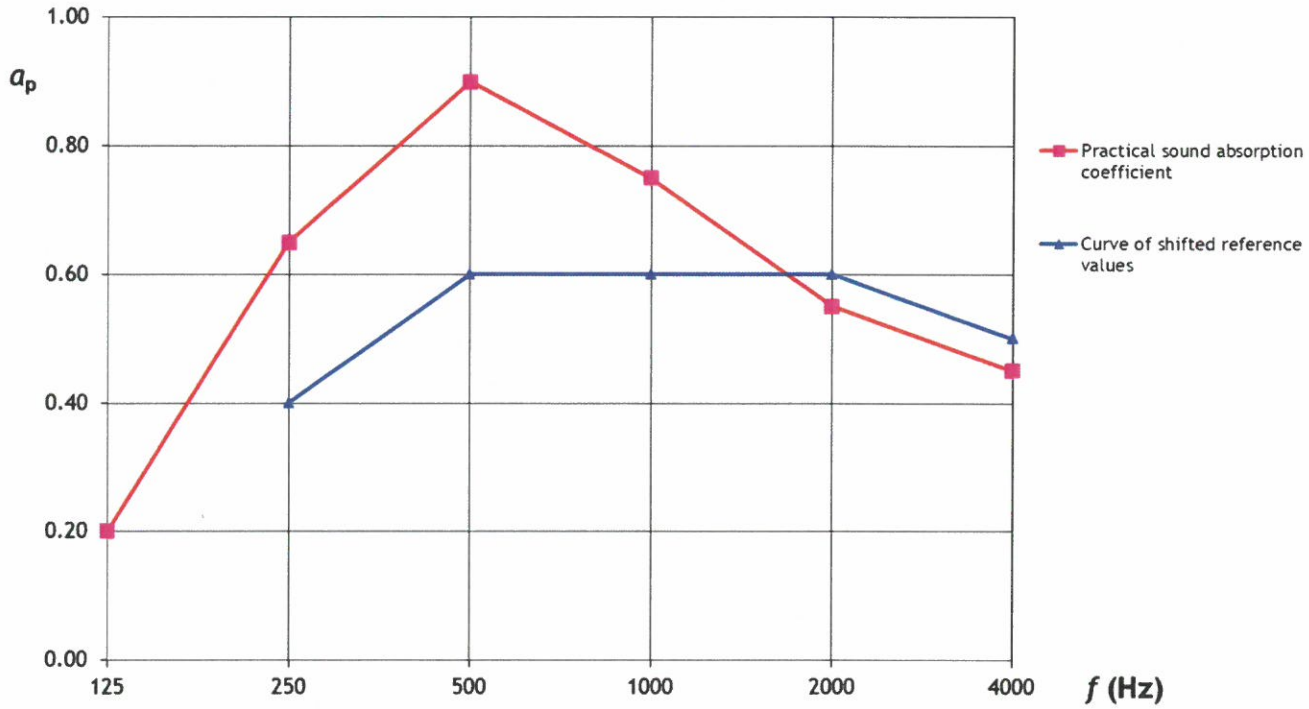
Sound absorption coefficient:



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Classification of the sound absorption measurement results of absorber Sonitus Acoustics Archwood, according to HRN EN ISO 11654: 1998

Frequency	Curve of shifted reference values	Practical sound absorption coefficient
***f* (Hz)**		**α_p**
125		0.20
250	0.4	0.65
500	0.6	0.90
1000	0.6	0.75
2000	0.6	0.55
4000	0.5	0.45



Absorber Sonitus Acoustics Archwood manufactured by SONITUS d.o.o., Krešimirova 71, HR-48000 Koprivnica	
Weighted sound absorption coefficient	Sound absorption class according to HRN EN ISO 11654:1998
α_w = 0,60(LM)	**C**

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