APPROVED
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Building Physics and Energy Efficiency
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REPORT No. 28k/25
Laboratory Acoustic Testing of a Wall Assembly
using SONOTIZ AT mat, which is made of staple fiber
produced by WOOD TECH SOLUTIONS SRL
for the indicators: Frequency Characteristic of Airborne Sound Insulation
and Airborne Sound Insulation Index

Executor: Department of Building Physics and Energy Efficiency, NIISK,
accredited by the National Accreditation Agency of Ukraine for testing in accordance with
DSTU EN ISO/IEC 17025:2019,
accreditation certificate No. 20167 valid until 26.01.2029
(Kyiv-37, Preobrazhenska St., 5/2, SE SRIBC)

Client: WOOD TECH SOLUTIONS SRL
MD-2029, Moldova, Chisinau, sos. Muncesti, 801
(Contract No. 9334 dated 18.11.2024)

Kyiv – 2025

1 Basis for testing: contract No. 9334 dated 18 October 2024 with WOOD TECH SOLUTIONS SRL.

2 References: the list of regulatory documents cited in this report is provided in Table 1.

Table 1 – Regulatory Documents

Designation	Title
ДСТУ Б В.2.6-85:2009	DSTU B V.2.6-85:2009 Building structures. Sound insulation of enclosing structures. Methods for evaluation
ДСТУ Б В.2.6-86:2009	DSTU B V.2.6-86:2009 Building structures. Sound insulation of enclosing structures. Measurement methods

3 Purpose of testing: to conduct laboratory testing of a wall assembly using the SONOTIZ AT mat made of staple fiber produced by WOOD TECH SOLUTIONS SRL for the indicators: Frequency characteristic of airborne sound insulation (R , dB) and Airborne sound insulation index (R_W , dB).

4 Application of the products: internal and inter-apartment partitions in residential buildings.

5 Partition materials for testing were provided by: representative of the Client.

6 Materials received for testing: Aerated concrete blocks of grade D400, 120 mm thick, total area 20 m², and SONOTIZ AT sound-insulating mat made of staple glass fiber in quantity of 15 m².

7 Date of receipt of samples for testing: Materials were received on 28.03.2025.

8 Wall assembly registration number: The construction is registered under No. 33/25. The general view of the assembly is shown in Figure 1.

9 Documentation used for specimen fabrication: Client's technical documentation**.**

10 Visual inspection results prior to testing: The installed partition had a high-quality appearance without defects or mechanical damage; it was deemed acceptable for testing.

11 Testing was conducted in reverberation acoustic chambers of the NIISK testing complex from March 31 to April 4, 2025, using the standard methodology in compliance with the regulatory document on sound insulation measurement methods – DSTU B V.2.6-86:2009.

12 Description of the tested partition: This partition features two layers of D400 grade aerated concrete blocks, each 120 mm thick, separated by a 40 mm air gap filled with SONOTIZ AT mat, which is made from staple fiber produced by WOOD TECH SOLUTIONS SRL. The total area of the partition is 10,3 m². A cross-section is illustrated in Figure 2.

13 Testing conditions: The partition was installed between two adjacent horizontal reverberation chambers following standard construction practices, with perimeter sealing of the test specimen.

Air temperature in the chambers during testing was 22°C, relative humidity 58%, atmospheric pressure 99.6 kPa.

14 Structural behavior during testing: No deviations were recorded.

15 Type and main characteristics of testing and measuring equipment: List of equipment used during testing is provided in Table 2.

Table 2 – List of Testing and Measuring Equipment

Equipment Name	Serial No.	Calibration Date		Certificate No.
		Last Calibration	Next Calibration	
Reverberation chamber complex: High-level chamber (HLC) and Low-level chamber (LLC-1)	-	09.2022	09.2027	UA/22/220928/001132
Sound level meter, spectrum analyzer Ekofizyka 110A with VMC-205	БФ170474	02.2025	02.2026	UA/24/250220/0499
Omnidirectional sound source DZS-12 (frequency range 80–10000 Hz)	-	-	-	-
Laboratory thermometer TL-2 (GOST 112-78), error K0,1 0C	192-1	10.2024	10.2025	UA/24/241003/3384
Psychrometer MB-4M with meteorological thermometers TM-6 (GOST 112-78), error K 1%	26431	10.2024	10.2025	UA/24/241003/3386

16 Acoustic testing results

Determined indicators – airborne sound insulation R (dB) in one-third-octave bands of the normalized range from 100 Hz to 3150 Hz, and airborne sound insulation index R_w (dB). The airborne sound insulation index R_w (dB) of the partition was calculated based on the frequency characteristics R (dB), in accordance with DSTU B V.2.6-85:2009.

Measured frequency characteristics of airborne sound insulation R (dB) in one-third-octave bands are shown in Figure 3.

Figure 1 – General view of the tested wall assembly No. 33/25

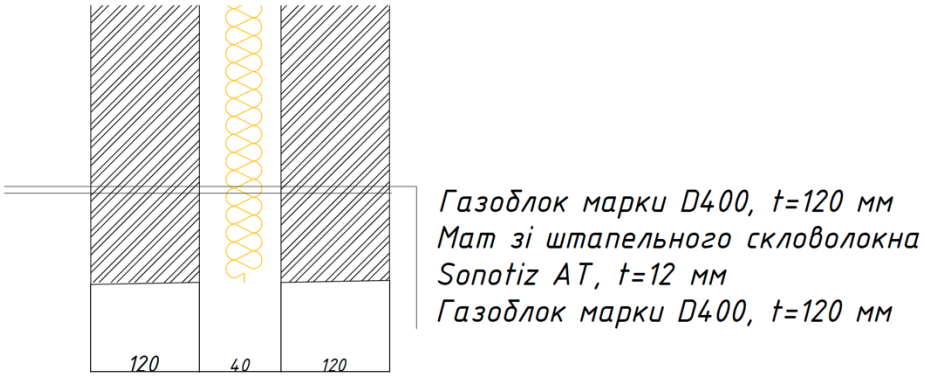
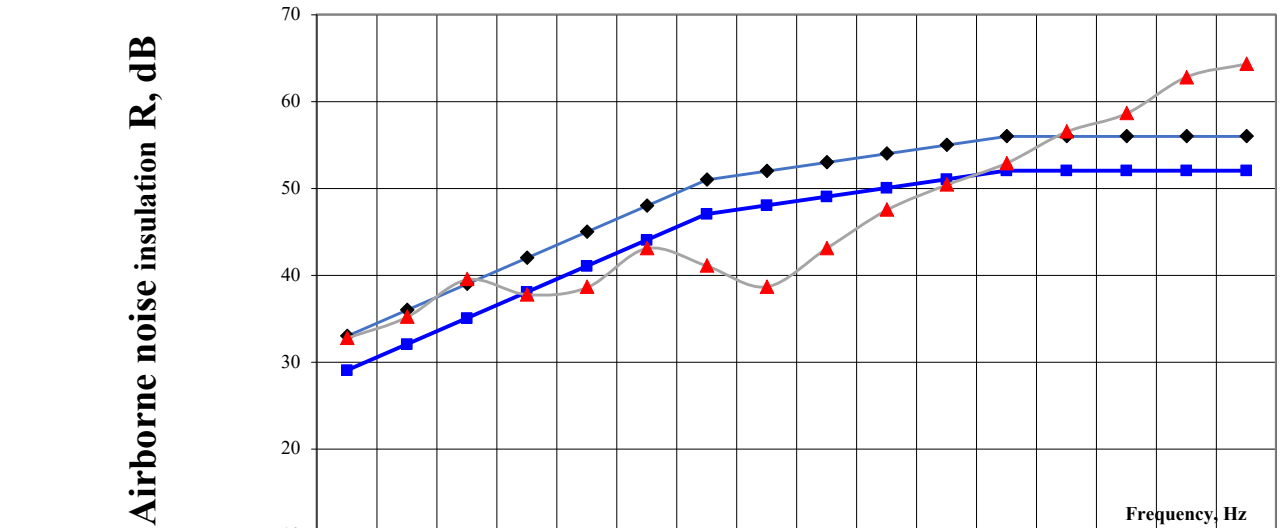


Figure 2 – Cross-section of the tested wall assembly No. 33/25



	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150
Reference curve RN, dB (ISO 717-1)	33	36	39	42	45	48	51	52	53	54	55	56	56	56	56	56
Offset char. (RN-4, dB)	29	32	35	38	41	44	47	48	49	50	51	52	52	52	52	52
Experimental char. R, dB	32,8	35,2	39,5	37,8	38,6	43,1	41,1	38,7	43,1	47,5	50,4	52,9	56,5	58,6	62,8	64,3

Figure 3 – Frequency characteristic of airborne sound insulation (R, dB) of the wall assembly № 33/25

Based on the laboratory testing results, the airborne sound insulation index of the wall assembly using SONOTIZ AT mat made of staple fiber produced by WOOD TECH SOLUTIONS SRL is:

$$R_W = \mathbf{48\ dB.}$$

Senior Researcher Dmytro BIDA

Note: This test report applies only to the tested specimens.
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