

**VILNIUS GEDIMINAS TECHNICAL UNIVERSITY
FACULTY OF CIVIL ENGINEERING
INSTITUTE OF BUILDING MATERIALS**

**LABORATORY OF THERMAL INSULATING MATERIALS
AND ACOUSTICS**

Linkmenų 28, 08217 Vilnius, Lithuania
Phone/fax +370 5 2751145, e-mail: akustika@vgtu.lt

**Test report
No: N-Izo-001/19**

24 September 2019
Valid for the tested object only

1 (4)

1. CLIENT: JSC "Narbutas International", Registration code 300591314, VAT: LT100002632414, Ukmergės g. 308, 12110 Vilnius, Lithuania.

2. PRODUCT: "SILENT ROOM" with closed door free standing in the open office premises. Formed from panels with acoustical treatment and glass. A fan is located within the ceiling of the room.

3. MANUFACTURER: JSC "Narbutas International".

4. SAMPLE SELECTED: by manufacturer and erected within the company area. Dimension of "Silent room" (1170x1205x2160) mm. Full view and dimensions of the "SILENT ROOM" presented in Annex 1.

5. TESTING DATA: 21 September 2019.

6. TESTS LOCATION: The testing of the free standing "Silent room" took place within the open office area at the "Narbutas International" premises.

7. TESTING IN ACCORDANCE WITH: LST EN ISO 10052-2004 and LST EN ISO 10052-2005/A1:2010 *Acoustics — Field measurement of airborne and impact sound insulation and of service equipment sound -Survey method*".

8. RATE OF THE TEST RESULTS CARRIED OUT IN ACCORDANCE WITH: LST EN ISO 717-1:2013 *Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation*.

9. SHORT DESCRIPTION OF MEASUREMENT PROCEDURES

9.1. Calibrations: before and after the measurements the two channel real time analyzer "Symphonie" No. 01496 was field calibrated using the CAL21 Sound Calibrator. No calibration shift was noted.

9.2. Indoor Ambient Noise Levels: ambient noise levels within the test area were between 35 and 38 dBA. Data was analysed and it was found that the ambient noise did not impact the test results.

9.3. Sound source: locations of omnidirectional loudspeaker Nor-P-270H No.26266 excited with pink noise generator Nor-230A in "SILENT ROOM" were used.

9.4. Average sound: the sound pressure level measurements were performed in both rooms according to the procedures in the standard 6.2.3 and 6.3.1 7. In accordance with definition for standardized level difference $D_{nT,w}$ presented in the LST EN ISO 16283-1:2014 in 3.13 and Note 2 if the source and receiving room have different volumes, level difference will be higher when test is carried out from smaller source room to a larger receiving room compared to the reverse situation. 1 m distance between any microphone positions and receiving room boundaries were used.

9.5. Reverberation time: within the premises reverberation time was measured as stated 6.5 in general accordance with LST EN ISO 3382-2:2008. Data was used in the calculation of the Standardized Level Difference.

10. INSTRUMENTATION USED FOR TESTS

10.1. Two channel real time analyzer, model "Symphonie 01 dB-Steel" No.01496; random incidence 1/2 inch microphone model 2560 No.3063 "Larson Davis" with preamplifier PRE 12H No. 011247, "01dB-Stell"; computer DELL Model No: PP01L No. AF264A02 with software Symphonie dBBATI32, verification certificate No. 0432844, 2018-10-03, 03/10/2018, valid till 04/10/2020;

10.2. Sound calibrator (reference sound source) CAL21 No. 51031256, calibration certificate No.044131, 03/10/2018, valid till 03/10/2019;

10.3. Omnidirectional (dodecahedron cabinet) sound source P 270H, No.26266, Certificate No. AK/A-3/9/18, 08/02/2018, valid till 07/02/2021;

10.4. Power amplifier Nor-260H, No. 30680 with Noise generator Nor-230A, Certificate No. AK/A-3/8/18, 11/12/2018, valid till 10/12/2021;

10.5. Digital temperature and humidity meter Kestrel 4500, No.562390, calibration certificate No.029000, 21/02/2018, valid until 20/02/2020;

11. TEST RESULTS

Airborne Sound Insulation performance expressed in $D_{nT,w} = 35$ dB

16. Expanded uncertainty with the confidence level of 95 % for a single number rating $D_{nT,w}$ is ± 1 dB.

17. Deviations from EN standards: measurements is the carried out from a smaller volume silent room to a larger volume receiving open office premises.

18. ANNEXES:

18.1. Annex 1. "SILENT ROOM" dimensions and general view presented on 1 page.

18.2. Annex 2. Tests results in accordance with LST EN ISO 10052:2004 and rating calculated in accordance with LST EN ISO 717-1:2013 on 1 page.

Technically responsible for the tests

In charge to perform testing

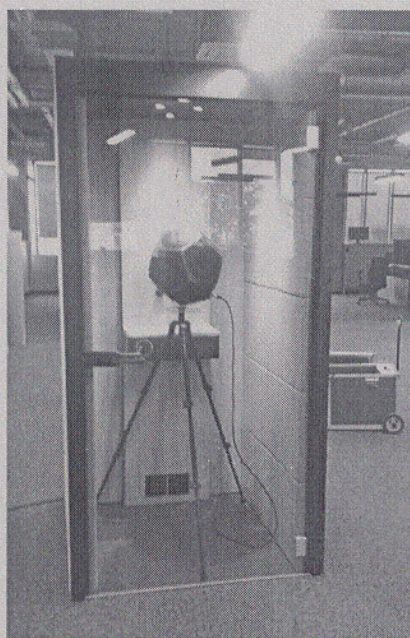
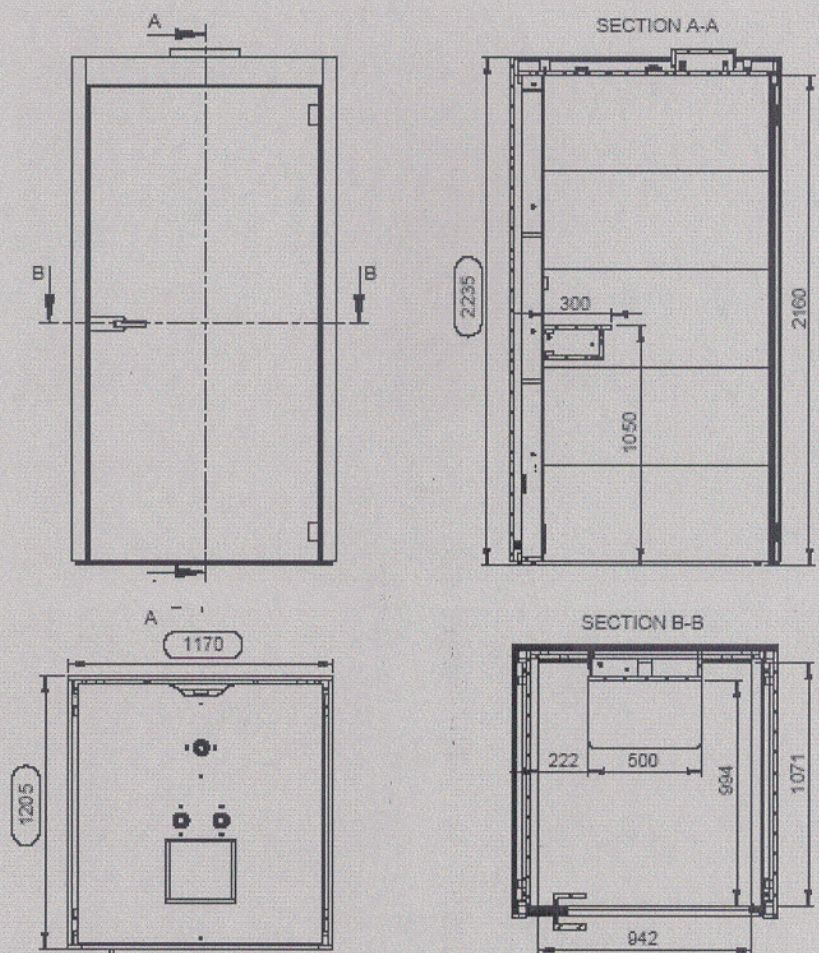


A. Jagniatinskis

B. Fiks

Continue of Test report No: N-Izo 001/19

“SILENT ROOM” dimensions and general view



TEST ACCORDING TO LST EN ISO 10052:2006*Field measurements of standardised level difference*

Client: JSC "Narbutas International", Vilnius

Test data: 21/09/2019

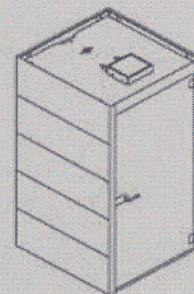
Place of tests: Ukmergės g. 308, Vilnius

Description of test element and test conditions:

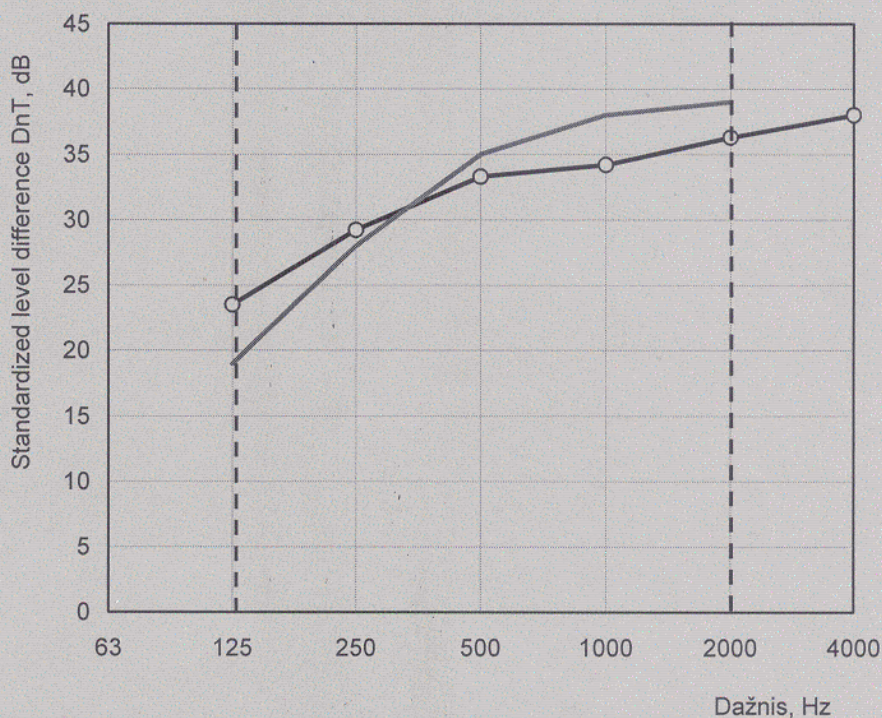
From open office free standing 'SILENT ROOM' with closed doorTest area: 2,8 m²Receiving room volume: 108,0 m³Source room volume: 3,4 m³

Air temperature in the rooms: 22 °C

Relative humidity in the rooms: 41 %



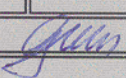
Freq., Hz	D_{nT} , dB octave
63	
125	23,5
250	29,2
500	33,3
1000	34,2
2000	36,3
4000	38,0



Key:
 ---○--- measured standardized level difference, D_{nT} dB
 ——— curve of reference value (EN ISO 717-1)
 - - - - - frequency interval (EN ISO 717-1)

Rating of measurement results in accordance with EN ISO 717-1:2013 $D_{nT,w}(C;C_{tr}) = 35 (-1;-3) \text{ dB};$

Evaluation based on field measurement results obtained by a survey method

Protocol ID: 19 oct 190921 en SMI forma.xls	Vilnius Gediminas Technical University Institute of Building Materials Laboratory of Thermal Insulating Materials and Acoustics Linkmenų 28, 08217 Vilnius, Lithuania ph: + 370 (5) 2751145 akustika@vgtu.lt
Date: 10/10/2019	
Person in charge to perform the test:  B. Fiks	