

VILNIUS GEDIMINAS TECHNICAL UNIVERSITY  
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INSTITUTE OF BUILDING MATERIALS

LABORATORY OF THERMAL INSULATING MATERIALS  
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TEST REPORT

No: N-Izo-003/19

20 December 2019

Valid for the tested object only

Page 1 (4)

1. CLIENT: JSC "Narbutas International", Registration code 300591314, VAT: LT100002632414, Ukmergės g. 308, 12110 Vilnius, Lithuania.
2. PRODUCT: "SILENT ROOM L" 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. SAMPLES SELECTED: by manufacturer and erected within the company area. Dimension of "SILENT ROOM L" 2548x1975x2235 mm. Full view and dimensions of the "SILENT ROOM L" presented in Annex 1.
5. TESTING DATA: 19 December 2019.
6. TESTS LOCATION: The testing of the free standing "SILENT ROOM L" took place within the open office area at the "Narbutas International" premises.
7. TESTING IN ACCORDANCE WITH: LST EN ISO 10052:2005 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 33 and 37 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 L" 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, 03/10/2018, valid till 04/10/2020.

10.2. Sound calibrator (reference sound source) CAL21 No. 51031256, verification certificate No. 067119, 18/12/2019, valid till 17/12/2020.

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 $D_{nT,w} = 30$ dB

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

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

#### 14. ANNEXES:

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

14.2. 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:

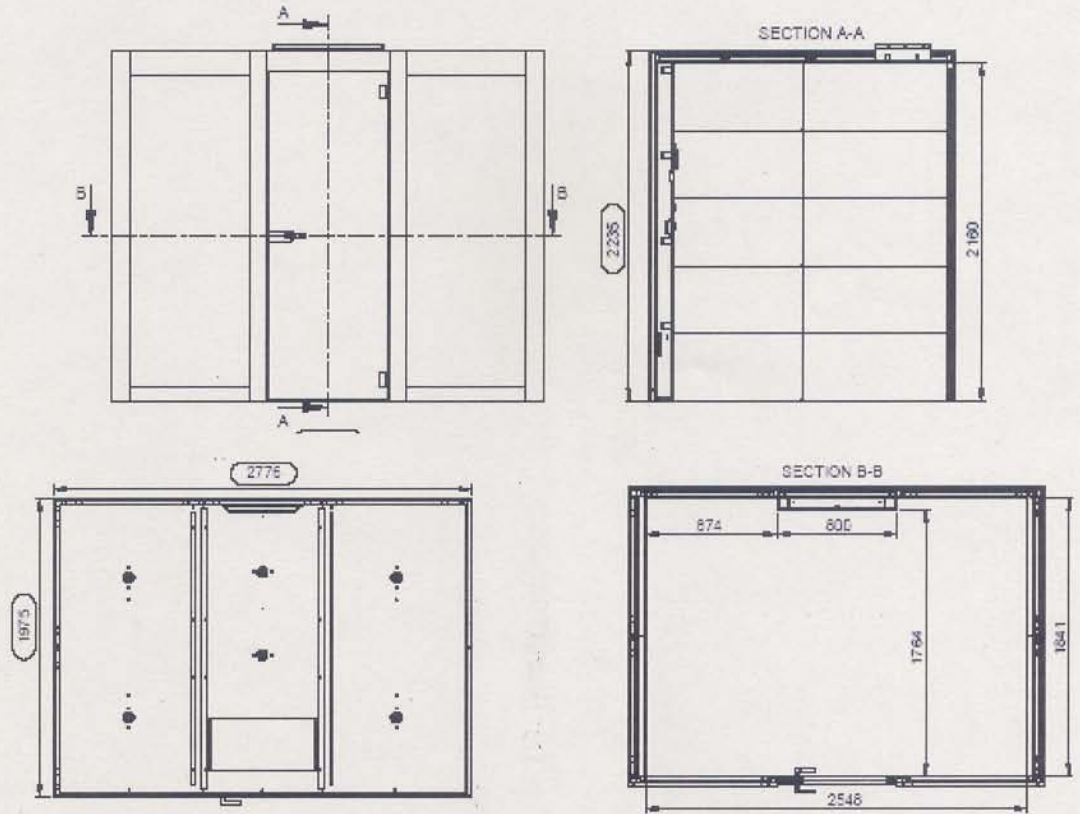
Dr. A. Jagniatinskis

In charge to perform testing

Dr. B. Fiks



“SILENT ROOM L” dimensions and general view



**TEST ACCORDING TO LST EN ISO 10052:2006**

Field measurements of standardised level difference

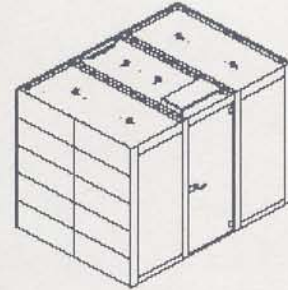
Client: JSC "Narbutas Internatoli", Vilnius  
 Place of tests: Ukmergės g. 308, Vilnius

Test data: 19/12/2019

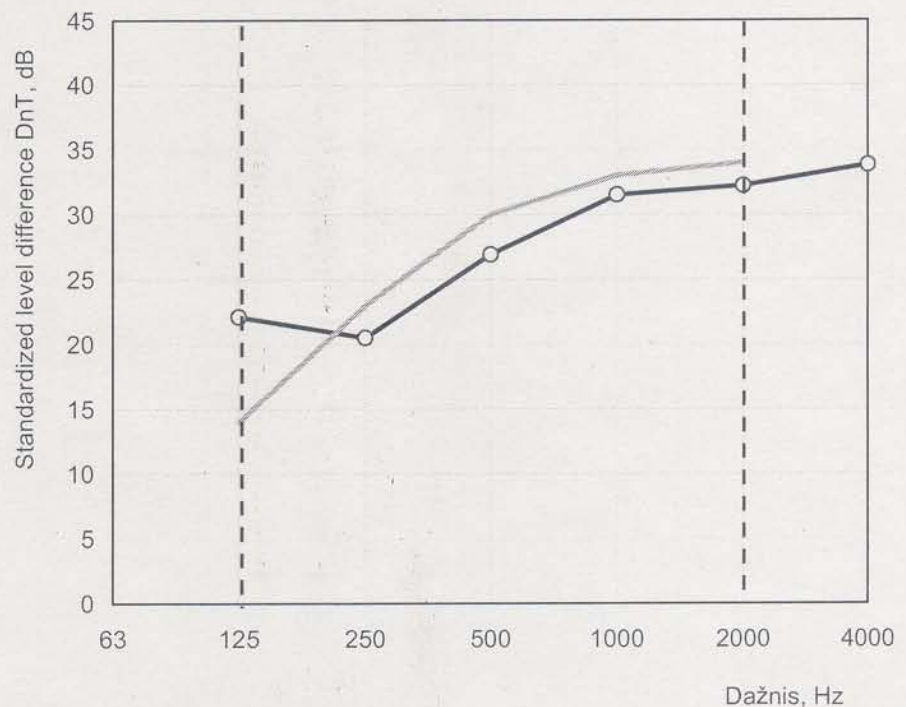
Description of test element and test conditions:

**From open office free standing 'SILENT ROOM L' with closed door**

Test area: 23,7 m<sup>2</sup>  
 Receiving room volume: 108,0 m<sup>3</sup>  
 Source room volume: 10,13 m<sup>3</sup>  
 Air temperature in the rooms: 22 °C  
 Relative humidity in the rooms: 29 %




Freq., Hz	$D_{nT}$ , dB octave
63	
125	22,1
250	20,5
500	26,9
1000	31,5
2000	32,2
4000	33,8



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** $D_{nT,w}(C;C_{tr}) = 30 (-1;-3) \text{ dB};$ 

Evaluation based on field measurement results obtained by a survey method

Test file ID: IzoReport DnTw 2019_12_07en did.xls	Vilnius Gediminas Technical University Institute of Building Materials
Date: 20 12 2019	Annex 2
Person in charge to perform the test:  B. Fiks	<b>Laboratory of Thermal Insulating Materials and Acoustics</b> Linkmenų 28, 08217 Vilnius, Lithuania ph: + 370 (5) 2751145 e-mail: akustika@vgtu.lt

End of Test report No. N-Izo A-003/19

