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FACULTY OF CIVIL ENGINEERING
INSTITUTE OF BUILDING MATERIALS

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TEST REPORT

No: N-Izo-002/19

20 December 2019

Valid for the tested object only

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1. CLIENT: JSC "Narbutas International", Registration code 300591314, VAT: LT100002632414, Ukmergės g. 308, 12110 Vilnius, Lithuania.
2. PRODUCT: "SILENT ROOM M" 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 M" 1920x1205x2235 mm. Full view and dimensions of the "SILENT ROOM M" presented in Annex 1.
5. TESTING DATA: 19 December 2019.
6. TESTS LOCATION: The testing of the free standing "SILENT ROOM M" 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 34 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 M" 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 $D_{nT,w} = 31$ dB

12. Expanded uncertainty with the confidence level of 95 % for a single number rating $D_{nT,w}$ is ± 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 M" 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:

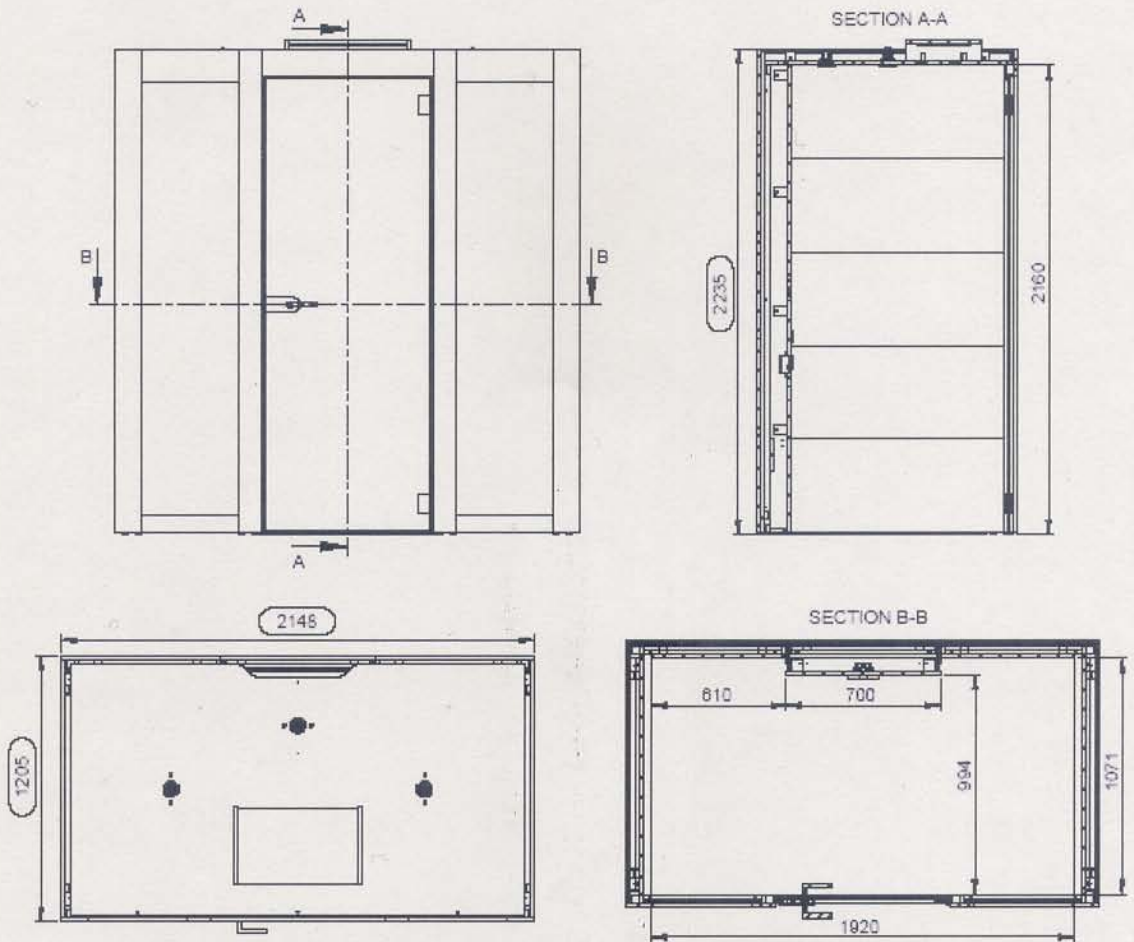
In charge to perform testing



Dr. A. Jagniatinskis

Dr. B. Fiks

“SILENT ROOM M” 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: 19/12/2019

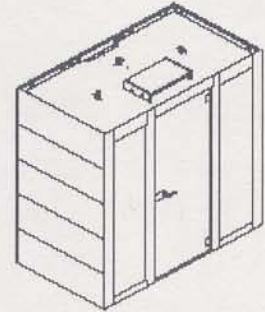
Place of tests: Ukmergės g. 308, Vilnius

Description of test element and test conditions:

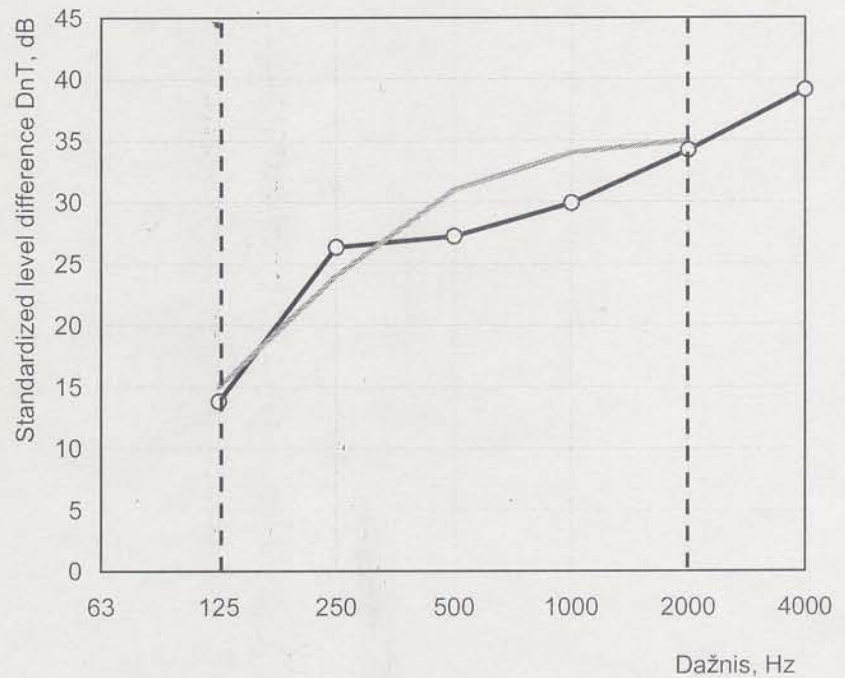
From open office free standing 'SILENT ROOM M' with closed doorTest area: 17,1 m²Receiving room volume: 108,0 m³Source room volume: 5,57 m³

Air temperature in the rooms: 22 °C

Relative humidity in the rooms: 29 %



Freq., Hz	D_{nT} , dB octave
63	
125	13,8
250	26,3
500	27,2
1000	29,9
2000	34,2
4000	39,1



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 $D_{nT,w}(C;C_{tr}) = 31 (-2;-5) \text{ dB};$

Evaluation based on field measurement results obtained by a survey method

Protocol ID: IzoReport DnTw 2019_12_07en maza.xls	Vilnius Gedimonas Technical University Institute of Building Materials Laboratory of Thermal Insulating Materials and Acoustics Linkmenų g. 28, 08217 Vilnius Ph: +370 (5) 2751145; e-mail: akustika@vgtu.lt
Date: 20 12 2019	
Person in charge to perform the test: B. Fiks	