

TEST REPORT No. 101 SF/14 A en
Date: 11 of June 2014

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Determination of the airborne sound reduction index

(test name)

Test method: *LST EN ISO 10140-2:2010 Acoustics – Laboratory measurement of sound insulation of building elements. Part 2: Measurements of airborne sound insulation (ISO 10140-2:2010); LST EN ISO 10140-1:2010 Part 1: Application rules for specific products (ISO 10140-1:2010); LST EN ISO 10140-4:2010 Part 4: Measurement procedures and requirements (ISO 10140-4:2010); LST EN ISO 10140-5:2010 Part 5: Requirements for test facilities and equipment (ISO 10140-5:2010).*

(number of normative document or test method, description of test procedure, test uncertainty)

Specimen description: Wooden window. Measurements: width – 1480 mm, height – 1230 mm. Profiles: frame 78×80 mm, sash 78×80 mm; System type: GAMA 78. Opening: opens inwards, right hand. Hardware: ROTO. Fixing: 7 points in perimeter. Gaskets: SCHLEGEL of foam rubber two contours. Glazing: glass 40 mm, 4-14Ar-4-14Ar-4 (two glasses selective coated, spaces filled argon gases, spacers bars - aluminum).

(identification of the specimen)

Customer: UAB „Langu gama“ Liepkalnio str. 160D, LT-02121 Vilnius

(name and address of enterprise)

Manufacturer: UAB „Langu gama“ Liepkalnio str. 160D, LT-02121 Vilnius

(name and address of enterprise)

Test result:

Name of quantity, unit	Test method	Test result
Weighted sound reduction index R_w (C ; C_{tr} ; $C_{100-5000}$; $C_{tr,100-5000}$), dB	LST EN ISO 717-1:2013*	35 (-2; -6; -1; -6;) dB
Note. The testing are carried out in purpose for conformity assessment of the product according to LST EN 14351-:2006+A1:2010 *Flexible scope of accreditation		

Test place: Laboratory of Building Physics, Institute of Architecture and Construction of Kaunas University of Technology

(name of the test laboratory)

Specimen delivery date: 2014-06-06

Test date: 2014-06-11

Sampling: The test specimen sampled by customer. Description N° 101/14, 2014-06-25

Additional information: Application 2014-01-02, drawing

(any deviations, complementary tests, exceptions and any information related with particular test)

Annex: 1 - Measurement results, 2 - Schematical view of the test, 3 - Cross section of the specimen

(the numbers of the annexes should be pointed out)

Technical manager:

(approves the test results)

Tested by:

(technically responsible for testing)

(signature)

(signature)

J. Ramanauskas

(n., surname)

V. Dikavičius

(n., surname)

S. P.

Validity – the named data and results refer exclusively to the tested and described specimens.
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Installation of the sample and measurement

Sample has been installed into the hole (1500×1250) of the dividing wall between two reverberating chambers by workers of the laboratory. The installation of the specimen is described on the drawing in Annex 2. The airborne sound reduction index has been determined by using the precision integrated noise spectra meter, positional microphone and loudspeaker.

Methods and equipment

The airborne sound reduction index R was determined in accordance with requirements of LST EN ISO 10140-1:2010 [1], LST EN ISO 10140-2:2010 [2], LST EN ISO 10140-4:2010 [3], LST EN ISO 10140-5:2010, [4]. Weighted sound reduction index R_w was determined in accordance with requirements LST EN ISO 717-1:2013 [5].

The thickness of the reverberating chamber's walls is 0,25m. The thickness of the covering masonry shell is 0,38m. The dimensions of the floor of sound chamber are 4,9x4,8m, height – 3,5÷3,0m (the coming down by steps ceiling). The dimensions of the floor of the sound receiving chamber are 4,8x4,3m, height – 3,5÷3,0m (the coming down by steps ceiling). The chamber's volumes are 80 and 68,56m³.

Equipment of the measurement:

Microphone L&D (Larson & Davis) 2560 Nr.2572; Initial microphone amplifier L&D, PRM 900C Nr.3782; Precision integrated noise spectra meter and noise generator L&D, 2800 B Nr.0527; Microphone LD Nr.2546, Initial microphone amplifier PRM900C Nr.3777 calibration certificate VMC Nr.794567 AV 3.3-00-807, 2011-03-07; Calibrator of sound level LD CAL200 Nr.0712 calibration certificate VMC Nr.794566 AV 3.3-00-806, 2011-03-07

Loudspeaker	made to order
Power amplifier	made to order
Microphone positioning system	made to order
Relative humidity and temperature sensor	Testo 615, No. 3070000244Gb
Static pressure	Barometer Aneroider No. 1685

Sources: [1] *LST EN ISO 10140-1:2010 Acoustics. Measurement of sound insulation in buildings and of building elements. Part 1: Application rules for specific products (ISO 10140-1:2010).*
[2] *LST EN ISO 10140-2:2010 Acoustics. Measurement of sound insulation in buildings and of building elements. Part 2: Measurement of airborne sound insulation (ISO 10140-2:2010).*
[3] *LST EN ISO 10140-4:2010 Acoustics. Measurement of sound insulation in buildings and of building elements. Part 4: Measurement procedures and requirements (ISO 10140-4:2010).*
[4] *LST EN ISO 10140-5:2010 Acoustics. Measurement of sound insulation in buildings and of building elements. Part 5: Requirements for test facilities and equipment (ISO 10140-5:2010).*
[5] *LST EN ISO 717-1:2013 Acoustics- Rating of sound insulation in buildings and of building elements. Part 1. Airborne sound insulation (ISO 717-1:2013).*

Distribution:	Customer	Original
	ASI, SF laboratory	Original

Contact person : Vidmantas Dikavičius, tel. +370 37 350799

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Notified Body number: 2018

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Annex 1 - Measurement results

Sound reduction index, R , in accordance with ISO 10140-2

(test name)

Test method: LST EN ISO 10140-1:2010, LST EN ISO 10140-2:2010, LST EN ISO 10140-4:2010, LST EN ISO 10140-5:2010

(number of normative document or test method, description of test procedure, test uncertainty)

Manufacturer: UAB „Langu gama“ Liepkalnio str. 160D, LT-02121 Vilnius

(name and address of enterprise)

Client: UAB „Langu gama“ Liepkalnio str. 160D, LT-02121 Vilnius

(name and address of enterprise)

Product identification: Wooden window. Glazing: glass 40 mm, 4-14Ar-4-14Ar-4

(identification of the product)

Test element mounted by: Laboratory person

Description of test facility, test element and test arrangement, including reference to ISO 10140-2:2010, where applicable:

Test room identification: horizontal **Relative humidity in the test rooms:** 59,0 %

Area, S , of the test element: 1,88 m² **Static pressure:** 0,1 MPa

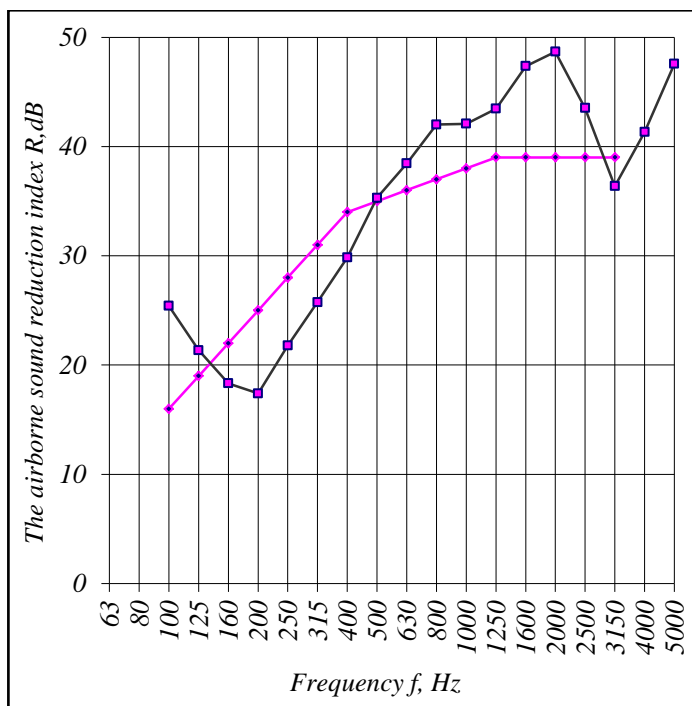
Air temperature in the test rooms: 21,0 °C **Receiving room volume:** 68,55 m³

Test date: 2014-06-08

Laboratory of Building Physics, Institute of Architecture and

Name of test institute: Construction of Kaunas University of Technology

Frequency f , Hz	R , dB 1/3 octave
50	
63	
80	
100	25,4
125	21,3
160	18,3
200	17,4
250	21,8
315	25,7
400	29,8
500	35,3
630	38,4
800	42,0
1000	42,1
1250	43,5
1600	47,3
2000	48,7
2500	43,5
3150	36,4
4000	41,3
5000	47,6



Rating in accordance with LST EN ISO 717-1:2013

$R'_w(C; C_{tr}) = 35 (-2; -6)$ dB; $C_{50-3150} =$ dB; $C_{tr, 50-5000} =$ dB; $C_{100-5000} = -1$ dB; $C_{tr, 100-5000} = -6$ dB

Tested by:

V. Dikavičius

(technically responsible for testing)

(n., surname)

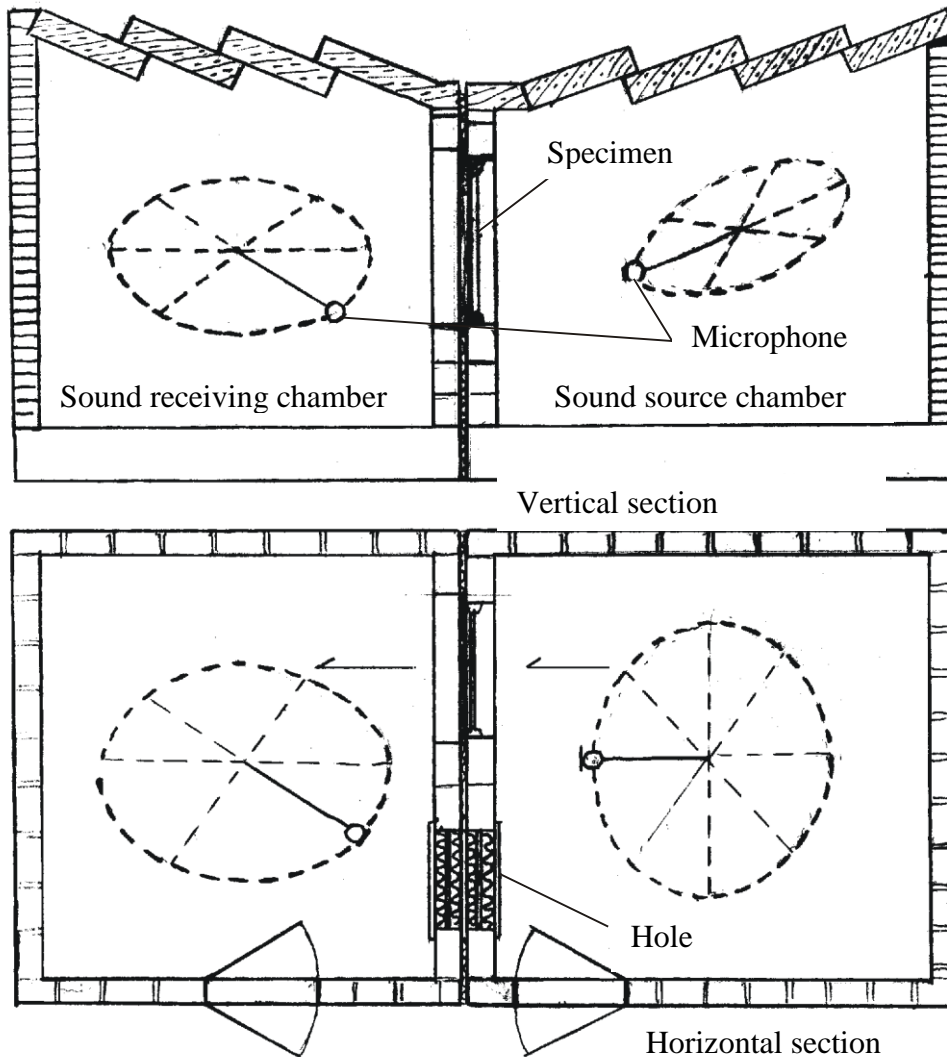
(signature)

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Annex 2. Schematical view of the test

Reverberating chambers



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Annex 3. Cross section of the specimen

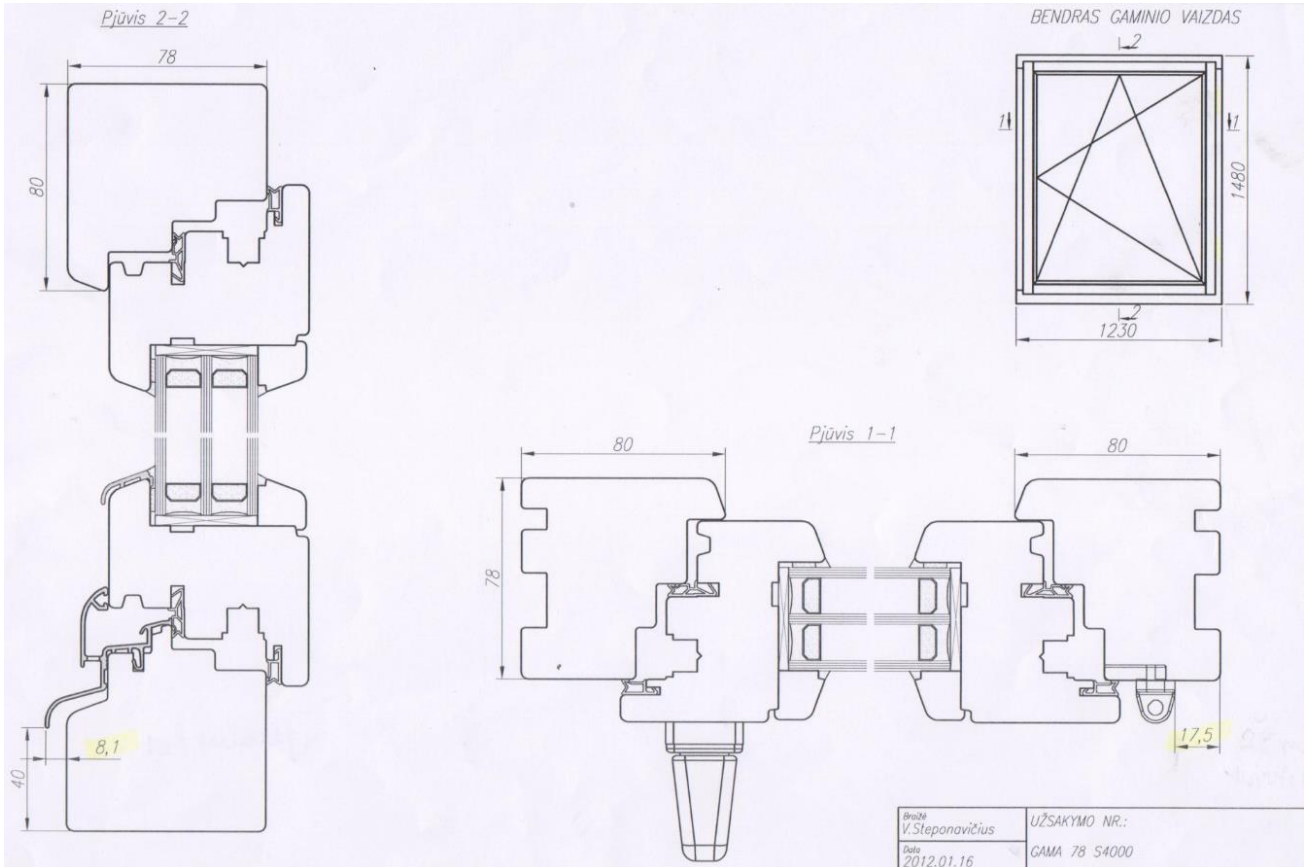


Fig 1. Window drawings (by the customer submitted information)

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