

**TEST REPORT No. 113 SF/15 A en**  
**Date: 04 of August 2015**

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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 finger jointed pine window : width 1230 mm , height 1480 mm. Frame 60×94 mm , leaf : 62 × 58 mm. Fittings: MILA firm scissors T / S M15 PN 3785-0-99-06 ( 1 set . ) MILA locking catch MDK14 M (3 pcs.). Safe drive M M100 / 28 / S9 950mm (1pc.). Without a handle. Glass seals: adhesive × 10 mm 2 KRONLIST, silicone neutral Remeron. Gaskets: Schlegel QL3053. Glazing: 4-20Ar-4 GNP double glazing 4mm clear -20Ar thermo remelis- 4mm selective. Glass used for adjustment of 3×24×100 glazing wooden blocks. Finish: Water-based Teknos paint (RAL9010).

(identification of the specimen)

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	33 (-1;-4; 0;-4;) dB

Note. The testing are carried out in purpose for conformity assessment of the product according to LST EN 14351-2:2006+A1:2010

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

(name of the test laboratory)

Specimen delivery date: 2015-07-27

Test date: 2015-07-28

Sampling: The test specimen sampled by customer. Description N° 113/15, 2015-07-21

Additional information: Application 2015-07-21, 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)

S. P.

J. Ramanauskas

(n., surname)

K. Miškinis

(n., surname)

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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 4,9×4,8m, height – 3,5÷3,0m (the coming down by steps ceiling). The dimensions of the floor of the sound receiving chamber are 4,8×4,3m, height – 3,5÷3,0m (the coming down by steps ceiling). The chamber's volumes are 80 and 68,56m<sup>3</sup>.

### 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  
ASI, SF laboratory

Original  
Copy

### Contact person :

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Annex 1 - Measurement results

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

**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)

**Product identification:** Wooden finger jointed pine window. Glazing: 4-20Ar-4 GNP  
(identification of the product)

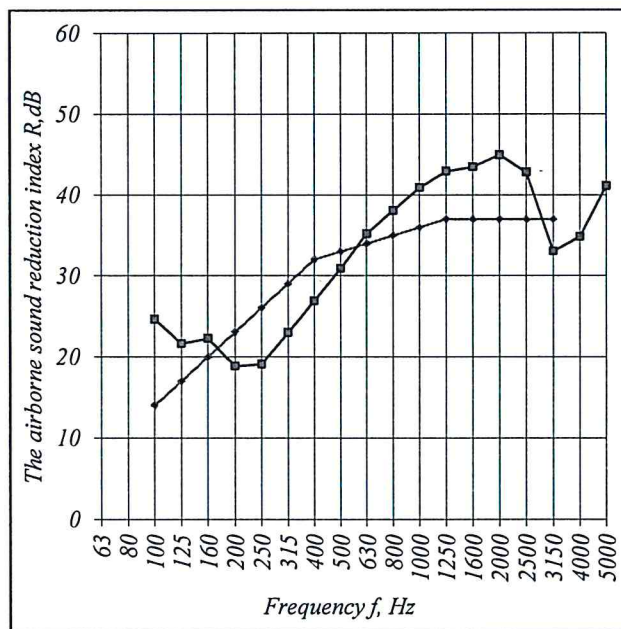
**Test element mounted by:** Laboratory person

**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:** 52,0 %  
**Area, S, of the test element:** 1,875 m<sup>2</sup> **Static pressure:** 0,1 MPa  
**Air temperature in the test rooms:** 19,0 °C **Receiving room volume:** 68,55 m<sup>3</sup>  
**Test date:** 2015-07-27

**Name of test institute:** Laboratory of Building Physics, Institute of Architecture and Construction of Kaunas University of Technology

Frequency <i>f</i> , Hz	R, dB 1/3 octave
50	
63	
80	
100	24,6
125	21,6
160	22,3
200	18,9
250	19,1
315	23,0
400	26,8
500	30,9
630	35,2
800	38,1
1000	40,9
1250	42,9
1600	43,4
2000	44,9
2500	42,8
3150	33,0
4000	34,8
5000	41,1



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

$R'_w(C; C_{tr}) = 33 (-1; -4)$  dB;  $C_{50-3150} =$  dB;  $C_{tr, 50-5000} =$  dB;  $C_{100-5000} = 0$  dB;  $C_{tr, 100-5000} = -4$  dB

Tested by:  
(technically responsible for testing)

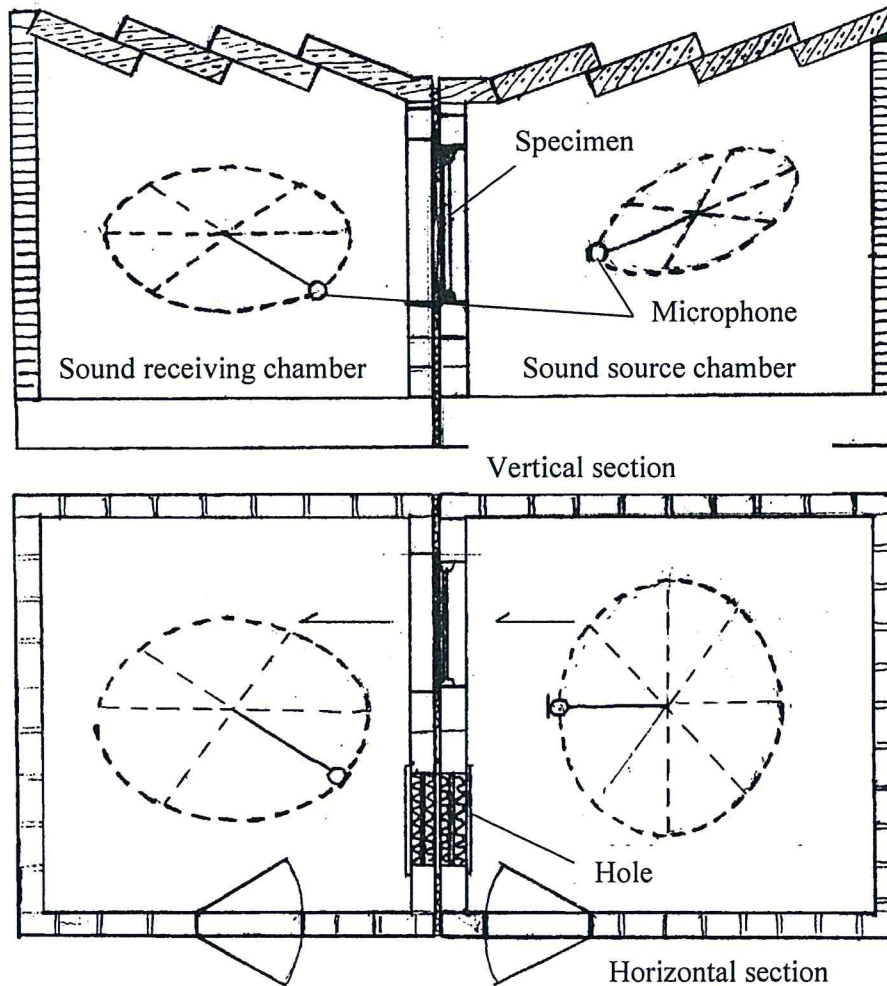
K. Miškinis  
(n., surname)

(signature)

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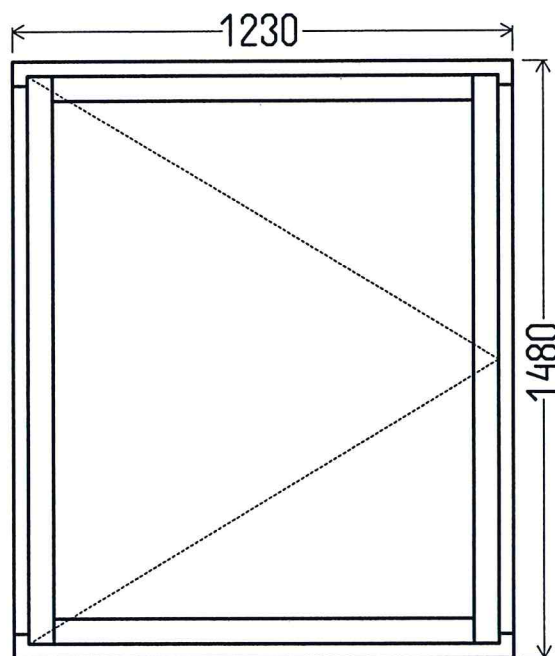
Annex 2. Schematical view of the test

Acoustics chambers



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Annex 3. Cross section of the specimen



View from the outside

L1 (1pcs)

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

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