

**INSTITUTE OF ARCHITECTURE AND CONSTRUCTION KTU**  
**BUILDING PHYSICS LABORATORY**

**TESTING PROTOCOL No. 004 SF/18 A**

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**30 March 2018**

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**Determination of the airborne sound insulation index**

(test name)

Tested in accordance with: *LST EN ISO 10140-2:2010 Acoustics. Laboratory measurement of sound insulation of building elements. Part 2: Measurement of airborne sound insulation (ISO 10140-2:2010); 12 LST EN ISO 10140-1:2016 Acoustics. Laboratory measurement of sound insulation of building elements. Part 1: Application rules for specific products (ISO 10140-1:2016); 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).*

(Regulatory document number or description of a test method, testing procedure, test error)

**Product:** A sample of "Glory" thermal insulation façade cladding panels. Dimensions: 1230 mm x 1480 mm x 310 mm

(title, normative document identifier or description, means of identification)

**Client:** UAB "Koderus", Žirgų Str. 19, Antezėrių vill., LT-14158, Vilnius district

(name and address)

**Manufacturer:** UAB "Koderus", Žirgų Str. 19, Antezėrių vill., LT-14158, Vilnius district

(name and address)

**Test results:**

Name and scale of the indicator	Test method mark	Test results
R <sub>w</sub> (C; C <sub>tr</sub> ; C <sub>100-5000</sub> ; C <sub>tr</sub> , C <sub>100-5000</sub> ), dB Air sound insulation index	LST EN ISO 717-1:2013	<b>34(-1; -3; -1; -3;) dB</b>

**Place of testing:** KTU Institute of Architecture and Construction  
Building Physics Laboratory

(name of the testing laboratory)

**Sample delivery date:** 18/01/2018

**Date of testing:**

09/02/2018

**Sampling performed by:** Client

**Other information:** Application dated 26/01/2018

(any deviations, additional tests, exemptions and any information relating to a particular test)

**Annexes:** 1 - Measurement results, 2 - Schematic view of the measuring chambers, 3 - General view of the sample

(numbers and titles of Annexes)

**Technical Manager**  
(approves test results)

/signature/

**J. Ramanauskas**  
(Name and surname)

**Test executor:**  
(technically responsible for the test)

/signature/

**V. Dikavičius**  
(Name and surname)

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The results of the test protocol relate only to the samples tested.  
Parts of the protocol may not be multiplied without the written consent of the laboratory.

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**Tunelio Str. 60, 44405 Kaunas, phone +370 37 350799, email: (statybine.fizika@ktu.lt)**

### Placement and measurement

The sample is placed by the Building Physics Laboratory personnel into the opening (1500 x 1250 mm) in the separating wall between the two echo chambers. The sample placement template is given in Annex No. 2. The airborne sound insulation index was determined using a precision integrating noise analyser, a positionable microphone and a multi-directional loudspeaker.

### Methods and equipment

The airborne sound insulation index was determined through measurements in accordance with LST EN ISO 10140-1:2016 [1], LST EN ISO 10140-2:2010 [2], LST EN ISO 10140-4:2010 [3], LST EN ISO 10140-5:2010 [4]. The airborne sound insulation index  $R_w$  was determined in accordance with LST EN ISO 717-1:2013 [5].

The masonry walls of the adjacent chambers are 0.25 m thick. The masonry shell enclosing both chambers is 0.38 m thick. The floor of the transmitted sound chamber has dimensions of 4.9 x 4.8 m and a height of 3.5+3.0 m (stepped drop ceiling). The floor of the receiving sound chamber has dimensions of 4,8 x 4,3 m., and a height of 3,5+3,0 m (stepped drop ceiling). The chambers have volumes of 80 and 68.56 m<sup>3</sup> respectively.

### Measurement equipment

Noise level meter-analyser L&D (Larson & Davis) 2800B No. 0527;	diffuse microphone L&D 2560 No. 2572;
primary amplifier PRM900C Nr.3782;	diffuse microphone L&D 2560 No. 2546;
primary amplifier PRM900C Nr.3777	calibration certificate VMC No.794567 AV 3.3-00-807, 07/03/2011;
acoustic calibrator L&D CAL200 No. 0712	calibration certificate VMC No. 794566 AV 3.3-00-806, 07/03/2011;
Multi-directional loudspeaker	custom-made
Power amplifier	custom-made
Microphone positioning system	custom-made
Relative humidity and temperature gauge	Testo 615, No. 3070000244Gb
Static pressure gauge	Barometer Aneroider No. 1685

### Sources

- [1] LST EN ISO 10140-1:2016 Acoustics. Laboratory measurement of sound insulation of building elements. Part 1: Application rules for specific products.
- [2] LST EN ISO 10140-2:2010 Acoustics. Laboratory measurement of sound insulation of building elements. Part 2: Measurement of airborne sound insulation.
- [3] LST EN ISO 10140-4:2010 Acoustics. Laboratory measurement of sound insulation of building elements. Part 4: Measurement procedures and requirements.
- [4] LST EN ISO 10140-5:2010 Acoustics. Laboratory measurement of sound insulation of building elements. Part 5: Requirements for test facilities and equipment.
- [5] LST EN ISO 717-1:2013 Acoustics - Rating of sound insulation in buildings and of building elements. Part 1. Airborne sound insulation.

### Distribution Client

KTU ASI, Building Physics  
Laboratory

Original  
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### Person to collaborate with:

Vidmantas Dikavičius, phone: +370 37 350799

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Annex No 1. Measurement result.

## Sound insulation indicator, $R$ , acc. to ISO 10140-2

(test name)

### Tested

in accordance with: LST EN ISO 10140-1:2016-LST EN ISO 10140-2:2010, LST EN ISO 10140-4:2010, LST EN ISO 10140-5:2010

(Regulatory document number or description of a test method, testing procedure, test error)

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(name and address)

**Manufacturer:** UAB "Koderus", Žirgų Str. 19, Antezerių vill., LT-14158, Vilnius district

(name and address)

**er:** A sample of "Glory" thermal insulation façade cladding panels. 1230 mm x 1480 mm x 310 mm  
(title, normative document identifier or description, means of identification)

### Product:

**Sample installer:** Laboratory personnel

**A description of the test facility, the sample and the test procedure based on LST EN ISO 10140-2:2010:**

**Place of testing:** horizontal

**Sample surface area  $S$ :** 1.875 m<sup>2</sup>

**Air temperature:** 18.0 °C

**Date of testing:** 09/02/2018

**Relative humidity:**

50.0%

**Static pressure:**

0.1 MPa

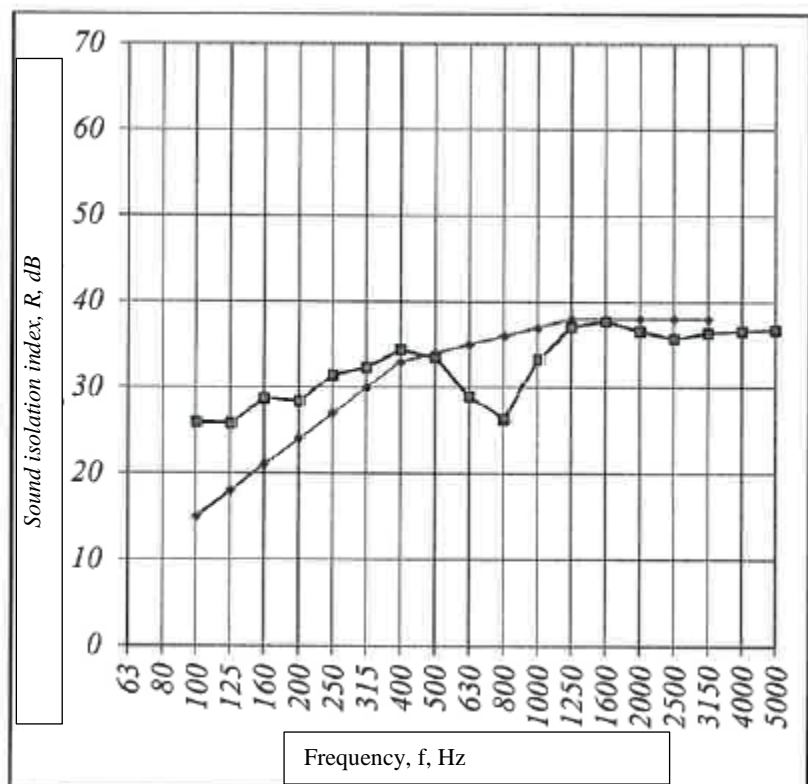
**The volume of the receiving sound chamber:**

68.55 m<sup>3</sup>

**Name of the Institute:**

KTU Institute of Architecture and Construction Building Physics Laboratory

Frequency $f$ , Hz	$R$ , dB 1/3 octave
50	
63	
80	
100	25,9
125	25,8
160	28,7
200	28,4
250	31,4
315	32,3
400	34,4
500	33,5
630	29,0
800	26,3
1000	33,3
1250	37,1
1600	37,7
2000	36,6
2500	35,7
3150	36,4
4000	36,6
5000	36,8



assessment according to LST EN ISO 717-1:2013

$R'_w(C; C_{tr}) = 34 (-1; -3)$  dB;  $C_{50-3150} =$  dB;  $C_{tr,50-5000} =$  dB;  $C_{100-5000} = -1$  dB;  $C_{tr,100-5000} = -3$  dB;

**Test executor:** /signature/  
(technically responsible for the test)  
surname)

V. Dikavičius  
(Name and

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