



INSTYTUT TECHNOLOGII DREWNA

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Notified Body No. 1583

**WOOD, WOOD-BASED MATERIALS, PACKAGING, FURNITURE,
WOODEN CONSTRUCTIONS AND WORKING MACHINES TESTING
LABORATORY**



PHYSICAL AND MECHANICAL TESTING SECTION

Poznań, 12.05.2017

TEST REPORT No *A1294/2017/S.B*

Subject of the order:

Testing of wooden multi-layer floorings with top layer made of oak wood

Order No:

A-1294-BDZ/2017

Name and address of the customer:

INSTYTUT TECHNOLOGII DREWNA
CENTRUM CERTYFIKACJI WYROBÓW PRZEMYSŁU DRZEWNEGO

Performance date:

5.05.2017 – 12.05.2017

Operators:

First name and surname	Signature
PhD (Eng) Grzegorz Pajchrowski	

Authorised representative

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MSc (Eng) Andrzej Noskowiak

1 IDENTIFICATION (TESTED OBJECTS DESCRIPTION)

The objects of the tests were two-layer flooring elements with a top layer made of oak wood. Manufacturer of flooring elements was the company **P. D. JAWOR Antoni Jan Gawiński** (ul. Grunwaldzka 87, 13-300 Nowe Miasto Lubawskie). Customer delivered for testing two variants of boards:

- a) with nominal thickness of 11 mm and bottom layer made of pine wood,
- b) with nominal thickness of 14 mm and bottom layer made of oak wood.

2 DATE OF DELIVERY OF TESTED OBJECTS

Samples were delivered on 12.04.2017.

There were no damages of the samples.

3 SCOPE AND METHODS OF EXAMINATION

Suitably to the subject of the Order the test of thermal conductivity according to *EN 14342:2013 p. 4.7 "Wood flooring and parquet – Characteristics, evaluation of conformity and marking"* was performed.

4 APPARATUS

The following equipment was used for the tests:

- electronic thickness gauge MITUTOYO, range: 0-50 mm, resolution: 0.01 mm (identification No: B12/53),
- electronic calliper MITUTOYO, range: 0-300 mm, resolution: 0.01 mm identification No: B12/107),
- laboratory electronic balance SARTORIUS, load capacity: 2100 g, resolution: 0.01 g (identification No: B9/02).

5 TEST RESULTS

Thermal conductivity, expressed by the value of thermal resistance, was calculated according to the standard *EN 14342:2013 "Wood flooring and parquet – Characteristics, evaluation of conformity and marking"* on the basis of density, moisture content and thickness of each layer determined by the methods according to the standards: *ISO 13061-2:2014 "Physical and mechanical properties of wood – Test methods for small clear wood specimens – Part 2: Determination of density for physical and mechanical tests"*, *EN 13183-1:2002 "Moisture content of a piece of sawn timber – Part 1: Determination by oven dry method"* and *EN 13647:2011 "Wood flooring and wood panelling and cladding – Determination of geometrical characteristics"*.

Mean values from measurements and results of the calculations for two-layer flooring elements are summarised in Table 1.

Table 1: Thermal conductivity of two-layer flooring elements of JAWOR company (t – thickness, d – density, w – moisture content, d_{12} – density at a moisture content of 12%, λ – thermal conductivity, R – thermal resistance)

Two-layer elements with nominal thickness of 11 mm						
Layer	t [mm]	d [kg/m ³]	w [%]	d_{12} [kg/m ³]	λ [W/mK]	R [m ² K/W]
top	3.5	683	8.5	691	0.17	0.021
bottom	7.4	506	10.6	510	0.13	0.056
entire element						0.077
Two-layer elements with nominal thickness of 14 mm						
Layer	t [mm]	d [kg/m ³]	w [%]	d_{12} [kg/m ³]	λ [W/mK]	R [m ² K/W]
top	6.1	683	8.5	691	0.17	0.036
bottom	7.9	705	9.0	711	0.17	0.047
entire element						0.083

6 STATEMENT

Test results presented in this report refer to the tested samples only.

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END OF THE REPORT
