



**Institute of Mechanised
Construction
and Rock Mining**



**Centre for Low Energy Building Technology
and Environmental Management in Katowice**

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Thermal properties test of floor panels and ceramic cladding

Created by:

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Client:

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Order scope:

Thermal conductivity test of the wooden panels (one wooden panel and a sample consisting of two wooden panels) and ceramic tiles.

Identification of the sample:

The following were provided for the test:

- two veneer flooring samples with the size of approx. (300 × 300) mm and thickness of approx. 8 mm;
- one ceramic tile sample with the size of approx. (300 × 300) mm and thickness of approx. 10 mm.

Sample delivery procedure:

The samples were delivered by the customer.

Determination of thermal conductivity coefficient

1. Seasoning:
The samples were conditioned to a constant mass under the following conditions: $(23 \pm 2)^{\circ}\text{C}$ and relative humidity $(50 \pm 10)\%$.
2. Measurement methodology:
The determination of the thermal conductivity coefficient/thermal resistance was performed in accordance with PN-EN 12667 standard with FOX 300 apparatus (by LaserComp) with heat flux density sensors.
3. Test results:

No.	Property	Test results		
		Layer floor 16 mm ^{*)}	Venifloor floor 8.5 mm	Ceramic tile
1	2	3	4	5
1.	Sample thickness, cm	1.87	1.01	1.04
2.	Relative weight change during seasoning, %	1.4	1.1	0.0
3.	Relative weight change during the test, %	0.0	0.0	0.0
4.	Changes in thickness (and volume) during the test, mm (mm ³)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
5.	Average temperature difference through the sample during the test, K	20	20	20
6.	Average test temperature, °C	10.02	10.02	10.01
7.	Ambient temperature around the apparatus during the test, °C	21	21	21
8.	Heat flux density flowing through the sample during the test, W/m ²	127.5	160.6	227.7
9.	Thermal resistance, R, m ² ·K/W	0.157	0.09	0.0876
10.	Thermal conductivity coefficient, λ , W/m·K	0.119	0.113	0.119
11.	Thermal transmittance coefficient, U, W/m²·K	6.36	11.19	11.44

*) Floor which comprises of e.g. natural veneer, HDF board, with a total thickness of 16 mm

The test was carried out in the Building Materials Laboratory of Institute of Mechanised Construction and Rock Mining, Katowice Branch.

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