

Katowice, 15 April 2025

 Łukasiewicz Warszawski Instytut Technologiczny	Łukasiewicz Research Network - Warsaw Institute of Technology (WIT) ul. Duchnicka 3, 01-796 Warsaw, Poland		 AB 008
"IZOLACJA" Construction Materials Laboratory		W. Korfantego 193 A, 40-157 Katowice, Poland tel. (+48) 32 258 13 73 e-mail: izolacja@wit.lukasiewicz.gov.pl	

REPORT No. 70/25/125/M-2/ $\lambda_{HFM I}$
ON THERMAL PROPERTIES OF BUILDING PRODUCTS AND
MATERIALS – DETERMINATION OF THERMAL RESISTANCE
USING THE HEAT FLUX SENSOR METHOD – PRODUCTS WITH
HIGH AND MEDIUM THERMAL RESISTANCE
according to PN-EN 12667:2002
 (number of pages: 3)

- Description and identification of the tested item:
 As declared by the client:
Product sample: SOLVO SO-02 PVC-U panels for external walls
according to PN-EN 13245-2:2009/AC:2010,
 manufactured by: Profile VOX sp. z o.o. Sp. k.,
 ul. Gdyńska 143, 62-004 Czerwonak, Poland.
 The following items were supplied for testing:
 - 1 undamaged sample measuring approximately (300 x 300 x 56) mm, consisting of three layers of tightly adhering panels.
- Name and address of the client:
 Profile VOX sp. z o.o., Sp. k., ul. Gdyńska 143, 62-004 Czerwonak, Poland
- Order No. and date: Order No. 70/25 dated 17 Jan. 2025
- Product sample ~~collection~~/delivery date: 27 March 2025
- Testing date: 07 Apr. 2025 ÷ 10 Apr. 2025
- Product sample collection/delivery procedure:
 Product sample collected and delivered to Łukasiewicz-WIT "IZOLACJA" Construction Materials Laboratory by the client. No data on product sampling.
- Seasoning routine:
 The test sample was conditioned to constant weight at $(23 \pm 2)^{\circ}\text{C}$ and $(50 \pm 5)\%$ relative humidity.

8. Test results:

No.	Property	Test results
1	2	3
1.	Sample thickness, m	0.0572
2.	Mass of seasoned material tested, g	2111
3.	Relative change in weight during seasoning	0.00
4.	Relative change in weight during testing	0.00
5.	Change in thickness (and volume) during testing, mm (mm ³)	0.0 (0.0)
6.	Mean sample temperature difference during testing, K	20.0
7.	Mean test temperature, °C	10.0
8.	Ambient temperature surrounding the testing instrument during the test, °C	21
9.	Density of the heat flux passing through the sample during testing, W/m ²	27.02
10.	Thermal resistance, R, m ² ·K/W	0.740
11.	Thermal conductivity coefficient, λ , W/m·K	0.0771
12.	Uncertainty (U) of measurement of the thermal conductivity coefficient, λ , W/m·K (The reported uncertainty is an expanded uncertainty with a confidence level of approximately 95% and coverage factor k=2)	0.0038

9. Other observations: none.

10. Additional information:

- The test was carried out at "IZOLACJA" Construction Materials Laboratory.
- Test sample thickness: measured in the apparatus under a load of 300 Pa.
- Calculated thermal resistance for one layer of panels is 1/3 of the measured resistance, i.e. $0.247 \text{ m}^2 \cdot \text{K/W}$.
- Measurements taken using a Netzsch HFM 446M device – measuring section dimensions: (102 x 102) mm, buffer section dimension: (305 x 305).
- Date of last calibration of the heat flux sensors: 25 March 2025.
- Calibrated using CRM IRMM-440 (Joint Research Center IRMM, Institute for Reference Materials and Measurements, Geel, Belgium):
CRM IRMM-440 thermal resistance at 10°C : $R_{10} = 1.066 \text{ m}^2 \cdot \text{K/W}$.
CRM IRMM-440 certification date: March 2000.
- Type of device: single-sample, symmetrical.
- Device orientation: horizontal.
- Hot sample side position: bottom.
- Edge heat loss reduction method: edge insulation.

11. Deviation or variation in the test method: none.

Tested by: Bogdan Kuźnik

Report by:
Adam Bielak

Authorised by: mgr Ewelina Kaputa-Kuc
Manager of the "IZOLACJA" Construction Materials Laboratory
/signed electronically/

Remarks:

1. The report is the property of the client.
2. The test results given in the Report refer to the tested samples of the product.
3. Without written consent of the Łukasiewicz Research Network – Warsaw Institute of Technology, the Report may only be reproduced in its entirety.
4. When referring to this Report, the following sentence should be used *verbatim*:
"Tested by the Łukasiewicz Research Network – Warsaw Institute of Technology, "IZOLACJA"
Construction Materials Laboratory, accredited in this respect by the Polish Centre for Accreditation,
No. AB 008".

Report No. 70/25/125/M-2/ $\lambda_{\text{HFM I}}$ ends here.
