

**CERTIFIED TRANSLATION FROM THE POLISH LANGUAGE**

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(-) [logo] ITH ®

## **Building Research Institute**

00-611 Warsaw, 1 Filtrowa St., tel. 22 8250471, fax 22 8255286

**Testing of thermal conductivity and the heat transfer coefficient  
in PERFEKT MATA products made from extruded polystyrene foam XPS,  
ordered by F.P.H.U Plastechnobud Ewa Kuczmierczyk**

**Paper No. 02738/15/Z00NF  
(LFS01-02738/15/Z00NF)**

**Warsaw, December 2015**



# Building Research Institute

TESTING LABORATORIES accredited by the Polish Accreditation  
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THERMAL PHYSICS, SANITARY SYSTEMS AND ENVIRONMENT DEPARTMENT  
THERMAL PHYSICS, SANITARY SYSTEMS AND ENVIRONMENT LABORATORY

## TEST REPORT NO. LFS01-02738/15/Z00NF

Customer: FPHU Plastechnobud Kuczmierczyk Ewa  
Customer's address: Działkowa 7, 43-330 Wilamowice, Stara Wies

### Information concerning the object of testing

Object of testing: designation, description, state and identification:	Construction materials and products – PERFEKT MATA from extruded polystyrene foam (XPS), board 5 mm
Object of testing received on:	25.11.2015
Object of testing acceptance report No.:	LFS00-02738/15/Z00NF
Object of testing acceptance procedure:	Acceptance procedure in accordance with the PZ ZLB 18 Procedure
Other information relating to the object of testing:	The customer delivered the material for testing in the form of mats. Samples of the dimensions 300x300 mm were cut. Photos of the sample surface are shown in Annex No. 1

### Information relating to testing

Testing commencement date: 14.12.2015  
Testing completion date: 15.12.2015

#### ☐ Test method

Determination of heat transfer coefficient  $\lambda$  in the conditions of determined heat flow was carried out with one-sample plate-type system with thermal flux density sensor, according to the PN-EN 12664:2002 standard.

The measurements were taken at the mean temperature of the sample of 10°C, temperature difference along the thickness of the sample - 20K and the heat flow from the bottom to the top; sample dimensions: 300x300 mm.

Additional information relating to the testing is included in Annex No. 2.

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☐ **Test results**

The results of heat transfer coefficient testing are shown in table 1, and the results of calculations and declared value of the heat transfer coefficient is shown in table 2.

Markings of the sample by the laboratory	*) Heat transfer coefficient (W/(m·K))
1/ LFS01-02738/15/Z00NF	0.0268
2/ LFS01-02738/15/Z00NF	0.0269
3/ LFS01-02738/15/Z00NF	0.0267
4/ LFS01-02738/15/Z00NF	0.0272
5/ LFS01-02738/15/Z00NF	0.0271
<i>*Expanded measurement uncertainty calculated with the use of coefficient k=2 corresponding to the confidence level ca. 95% is 3%, according to the Uncertainty Card LF-2/08</i>	

Table 2

$\lambda_m$	0.02693 W/(m·K)
$S_\lambda$	0.000169 W/(m·K)
$k_5$	2.74
$\lambda_{90/90}$	0.02747
$\lambda_D$	0.028 W/(m·K)

The value of thermal conductivity for the mat 5 mm thick equals 0.18 (m<sup>2</sup>·K)/W.

**Responsible for testing**  
**Aldona Wasilewska, MSc Eng.**  
Title, full name  
(-) Aldona Wasilewska  
signature

**The report authorised by**  
**Barbara Pietruszka, DSc**  
Title, full name  
(-) [signature]  
signature

**Warsaw, 29.12.2015**

*Research Laboratory declares that the test results relate only to the tested sample. Without a written consent of the Research Laboratory, this Report may only be reproduced in its entirety.*

*The test report shall not be deemed to replace any documents required for the marketing purpose and making building products available.*





## Annex No. 1

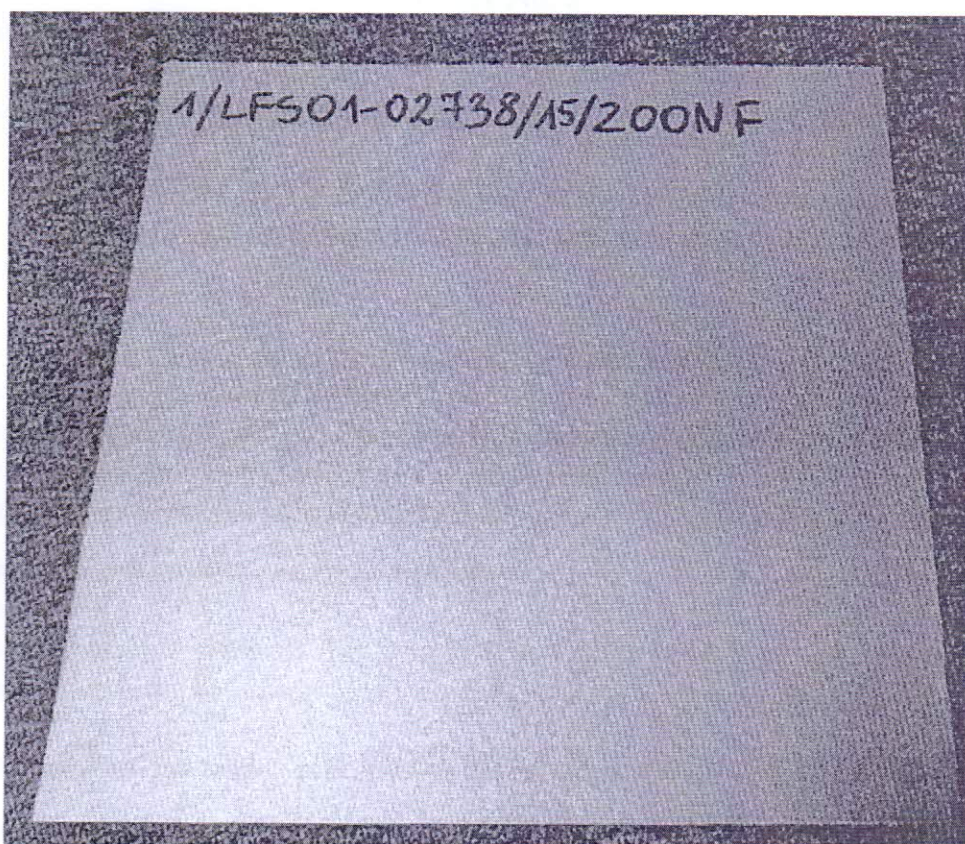


Fig. 1 Photo of the sample – face

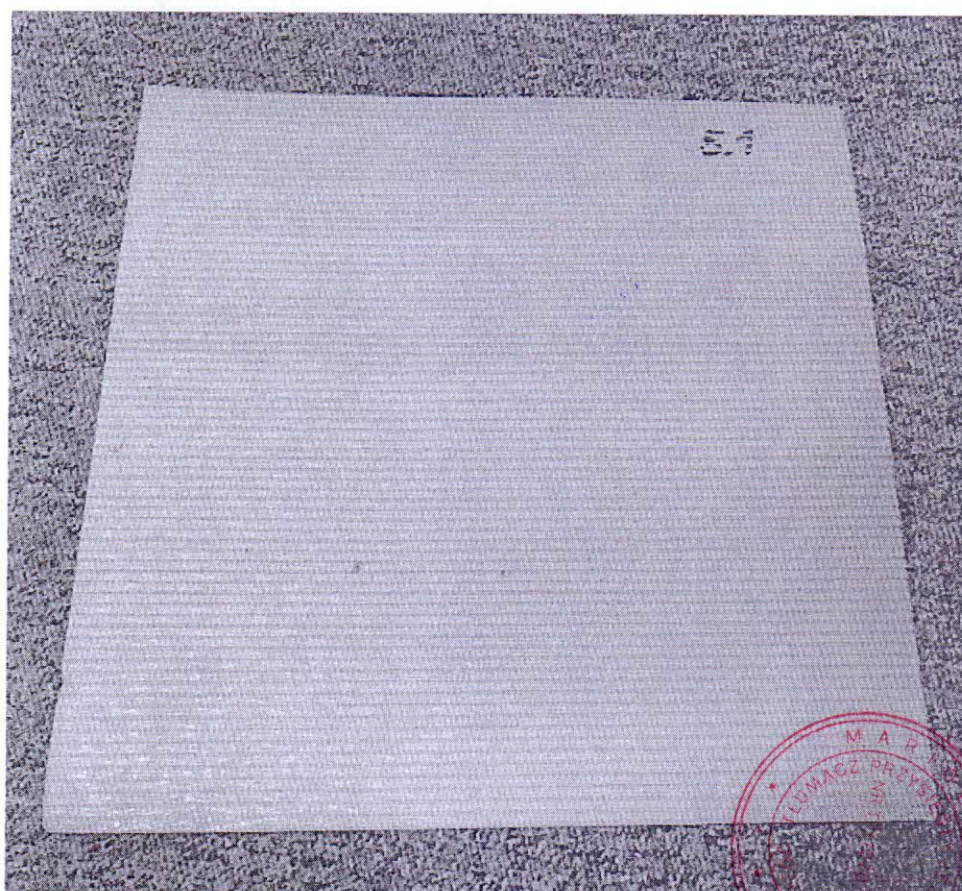


Fig. 2 Photo of the sample – back



**Annex No. 2**

**Additional information relating to testing, required under section 9 of the PN-EN 12664:2002 standard:**

The method of reduction of the edge losses: closed test chamber with the thermally insulated walls.

Heat flux density in the sample: the plate-type system applied in testing calculates and provides the value of the heat transfer coefficient in the tested sample without providing results of testing of the heat flux density.

Calibration of the plate-type system with thermal flux density sensor:

- validity date of the last calibration: 29.02.2016
- description and the number of the reference standard **IRMM-440** sample No. 2
- date of certification of the reference standard: 2000
- validity of the reference standard: indefinitely

Information about steam-tight coating: not present

Checking of the sample flatness: the samples yield to straightening pressure of the testing apparatus, which ensures flatness of samples while measurements were being taken.

List of deviations from the testing procedure is described in: PN EN 12664:2002 not applicable

**Remarks:** none

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*I, the undersigned Mariola Maroszek, Duly Sworn Translator of the English Language, appointed by the Minister of Justice by virtue of the letter No DO-V-0191-1236/05 of July 14, 2005 and entered in the Register of Sworn Translators under the No. TP/1270/05, hereby certify that the above text is a true and complete translation of the original document presented to me in the Polish language.*

*Witness my hand this twenty-third day of January  
two thousand and sixteen /23.01.2016/.*

*Fee collected pursuant to the Regulation of Minister of Justice of Jan. 24, 2005. (Journal of Laws No. 15 of 2005, entry 131, § 2 item 2 point 1a).*

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