

All tests in this report are executed according to the ISO 9001  
 certified Quality management system of the BBRI

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## TEST REPORT

TRANSLATION OF THE REPORT DE 632xC012 – ENb290-A

<b>Laboratory</b> <b>Hygrothermie (Lab HY)</b>	<b>O/References</b>	DE 632xC549 HY17 039 Page: 1/3
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<b>Requested by</b>	<b>ISOLA BELGIUM nv</b> Vrijheidweg, 10 Mr. H. Mullens BE – 3700 TONGEREN		
<b>Date of the request</b>	15 March 2017	<b>Sample(s) registration</b>	N-2012-46-029
		<b>Date of receipt of the sample(s)</b>	14 November 2012
<b>Drafting date of report</b>	15 March 2017		
<b>Test carried out</b>	Thermal conductivity measurement of a sample made of PUR granulates.		
<b>References</b>	EN 12667 (2001). SP / EN / 6.1		

*This test report contains 3 pages, it may only be reproduced in its entirety.  
 Each page of the original report has been stamped (in red) by the laboratory and initialled by the head of laboratory.  
 The results and findings are only valid for the tested samples.*

*Sample(s) to be removed from our laboratories 30 calendar days after sending of the report, unless a written request is received from the client.*



Technical responsible  
 R. Bossicard



Deputy Head of Laboratory  
 A. Tilmans, Ir.

## 1. TEST SPECIMEN

The test specimen is composed of PUR granulate (bulk material) of the THERMOGRAN type.

The sample has been prepared by the BBRI following to the prescriptions of the requester:

1. Take granulates out of a bag and empty them in layers of +/- 3cm in a wooden frame
2. Spread them evenly and press well using a trowel
3. Repeat step 1 and 2 till the requested thickness has been obtained

The dimensions of the frame are 600 mm x 600 mm (inside dimensions 576 mm x 576 mm) and it has a nominal height of 101 mm with a Visqueen bottom layer of 0.05 mm.

Production date: 2012.10.31.

## 2. SPECIMEN CONDITIONING BEFORE TESTING

The test specimen has been conditioned in a ventilated oven at 70°C during 25 weeks.

## 3. TEST RESULT

The thermal conductivity value is equal to **0.0426 W/mK** at a mean temperature of 10.00°C.

Page 3/3 gives detailed information about the measurements.

## 4. EQUIPMENT

The equipment is a heat flow meter apparatus with a single-specimen symmetrical configuration. The dimensions of the plates of the apparatus are 600 mm x 600 mm.

The measurements are carried out on the specimen in horizontal position.

The specimen is placed between two heat flow meters with the hot plate at the lower level and the cold plate at the upper level.

## 5. REFERENCE MATERIAL

The equipment is calibrated with the IRMM-440 reference material. This reference material is a resin-bounded glass fibre board (identification number 4) with the dimensions of 600 mm x 600 mm and a thickness of 34.35 mm.



### Heat flow meter method

Nr. DE : 632xC549  
 Nr. Specimen : ENb290-A  
  
 Conditioning : 25 weeks at 70°C  
 Duration of the test : 64 h. 4 min.  
  
 Date of the test : 13.07.08  
 Date of the last equipment control : 13.06.05  
*The equipment control is realised with a transfer specimen*  
*The calibration is performed according to IRMM440 reference material*

<u>Specimen details</u>	Unit	Values
Length	m	0.576
Width	m	0.576
Thickness at the start of test	m	0.10686
Thickness at the end of test	m	0.10608
Weight at the start of test	kg	7.58300
Weight at the end of test	kg	7.59100
Weight of the dry specimen	kg	7.58300
Density at the end of test	kg/m <sup>3</sup>	215.690
Density of the dry specimen	kg/m <sup>3</sup>	215.463
Humidity rate at the end of test	m <sup>3</sup> /m <sup>3</sup>	0.000

<u>Measured data</u>	Unit	Meas. 1	Meas. 2	Meas. 3	Meas. 4	Meas. 5	Average
Surface temperature of the specimen - hot side	°C	19.92	19.93	19.93	19.93	19.94	19.93
Surface temperature of the specimen - cold side	°C	0.07	0.07	0.07	0.07	0.07	0.07
Density of heat flow - hot side	W/m <sup>2</sup>	7.9364	7.9434	7.9399	7.9433	7.9480	7.9422
Density of heat flow - cold side	W/m <sup>2</sup>	8.0205	8.0481	8.0055	8.0418	8.0180	8.0268
<u>Calculated data</u>							
Temperature difference	K	19.85	19.86	19.86	19.86	19.87	19.86
Mean specimen temperature	°C	10.00	10.00	10.00	10.00	10.01	10.00
Thermal resistance	m <sup>2</sup> .K/W	2.4880	2.4838	2.4910	2.4848	2.4890	2.4873
Thermal permeance	W/m <sup>2</sup> .K	0.4019	0.4026	0.4014	0.4024	0.4018	0.4020
Thermal conductivity	W/m.K	0.0426	0.0427	0.0426	0.0427	0.0426	<b>0.0426</b>

*The maximum probable error on the thermal resistance, permeance and conductivity, determined according to the EN 1946-3 and EN 12667 standards, is lower than 2%*

