



<b>REPORT No.</b>	<b>059493-01-a</b>
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<b>ADDRESS</b>	POLÍGONO INDUSTRIAL CALLE F NAVE 9 31592 CINTRUÉNIGO (NAVARRA)
<b>PURPOSE</b>	DETERMINATION OF THERMAL RESISTANCE BY HEAT FLOW METER METHOD (EN 12667:2002)
<b>TESTED SAMPLE</b>	CORK SHEETS REF.:«G01» MANUFACTURED THE 01.03.2016
<b>DATE OF RECEIPT</b>	05.05.2016
<b>TEST DATES</b>	09.05.2016 – 10.05.2016
<b>ISSUE DATE</b>	23.05.2016
<b>TRANSLATION DATE</b>	01.06.2016

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\* The results of the current report concern only and exclusively the sample tested.

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## SAMPLE CHARACTERISTICS

On 5 May 2016 TECNALIA received from THERMOCORK, a (600 x 600 x 60) mm cork sheet sample referenced as:

« **G01** » manufactured the **01.03.2016**

This material is subject to the compliance with product standard EN 13170:2013.

## TEST REQUESTED

The test requested has been the determination of the **thermal resistance** and the **thermal conductivity coefficient**,  $\lambda$ (W/m.K) according to the testing methodology specified in EN 12667:2002 "*Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Products of high and medium thermal resistance*".

## TEST CONDUCTED

The thermal conductivity is measured using the heat flow meter method horizontally and, therefore, perpendicular to the sample. A measuring device (code: CO05Y39-01) using a 600 x 600 mm symmetric single sample with an effective 300 x 300 mm measurement size area is used. The sample is placed in the bottom part of the equipment, more specifically over the hot plate (bottom plate).

The sample is assembled horizontally with upward flow and is fitted with two heat flow meters. The hot side of the sample is in the bottom position.

Last calibration date is 18/02/2016, and associated standards used were calibrated by IRMM.

## CONDITIONING

Sample is conditioned for four days at  $23 \pm 2$  °C and  $50 \pm 5\%$  relative humidity. Next, dimensional parameters are measured and testing proceeds. The dimensional characteristics before and after conditioning are:

Sample	Measured thickness (m)	Mass before (Kg)	Mass after (Kg)	Mass difference (%)
1	0.059	4.72	4.72	0.0

Table 1: Characteristics of the sample

## RESULTS

The dimensional characteristics of the thermal resistance test specimen were as follows:

Samples	Thickness (m)	Width (m)	Length (m)	Weight (kg)	Density (kg/m <sup>3</sup> )
1	0.059	0.594	0.596	4.716	218.3

Table 2: Characteristics of the sample

Environmental conditions were as follows:

- Setpoint temperature in the hot side: 15 °C
- Setpoint temperature in the cold side: 5 °C
- Temperature difference between the hot and cold side was 10 °C.
- Average test temperature was 283 °K.

No changes were observed in the test specimen thickness or volume during the test. Relative mass change was 0%.

Sample	Thermal conductivity (W/mK)	Heat flow density (W/m <sup>2</sup> )	Thermal resistance (m <sup>2</sup> K/W)	Measurement uncertainty (%)
1	0.058	9.74	1.02	3.0

Table 3: Test results

### UNCERTAINTY STATEMENT

The expanded measurement uncertainty was obtained by multiplying the standard measurement uncertainty by a coverage factor  $k=2$ , that for a normal distribution, corresponds to a coverage probability of around 95%.