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SAMPLE IDENTIFICATION: 06/09-1

SAMPLE DESCRIPTION: 5 Insulation Cork Board (ICB) test specimens

SAMPLE RECEPTION DATE: 2009-02-09

DATE OF TEST: 2009-02-12/20

PROCº: 0803/73/11484

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INSULATION CORK BOARD (ICB) SAMPLE
DETERMINATION OF THE THERMAL CONDUCTIVITY

1 — STANDARD/TEST SPECIFICATION

European standard EN 12667:2001 "*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*".

Tests have been performed over five test specimens, which had nominal facial dimensions of 300 *mm* (length and width) and thicknesses indicated in Table 1 (*vd.* 3).

Test specimens were previously conditioned for a period of 72 h at (23±2) *ºC* and relative humidity of (50±5) *%*.

After testing, test specimens were dried in a ventilated oven at (105± 5) *ºC*, until constant mass was reached.

Tests have been performed at the mean temperatures of 10 *ºC*.

Room conditions during tests were similar to those of sample conditioning (23±2 ºC; 50±5% RH).

2 — SAMPLING PROCEDURE AND TEST SPECIMENS

Sampling by the sponsor.

The sample consisted of five Insulation Cork Board (ICB) test specimens with nominal dimensions of 300 mm x 300 mm x 30 mm.

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According to the information provided by the sponsor test specimens were extracted from a sample obtained from a cold storage building complex located in Porto´s great metropolitan area (Portugal).

The building complex, presently undergoing demolition works, was denominated FRIGOMATO and was built in 1964.

According to the information provided by the sponsor the above mentioned ICB test specimens were applied in the building complex at the time of its construction (1964).

Test sample was identified by the sponsor as follows: *Boards to be recycled dating from 1964.*

3 — TEST RESULTS

Test results are presented in Table 1.

Table 1 — Determination of the thermal conductivity of Insulation Cork Board (ICB). Individual and mean test results

Product reference name	Test specimen characteristics			Test conditions					Test results
	Test thickness (*) (mm)	**Apparent density** **(kg/m³)**	Relative mass change after final drying (**) (kg/kg)	Heat flow direction	**Mean temperature** **(ºC)**	Temperature difference across the specimen (ºC)	Density of heat flow rate through the specimen (W/m²)	Relative mass change during test (kg/kg)	**Thermal conductivity** **(W/m. ºC)**
A1	28,5	**110,8**	0,029	Vertical, upwards	**9,9**	16,4	22,4	0,001	**0,0390**
A2	28,3	**101,5**	0,036		**9,9**	16,5	22,8	0,002	**0,0391**
A3	28,4	**108,6**	0,039		**10,0**	16,4	22,5	0,002	**0,0390**
A4	28,3	**98,4**	0,036		**10,0**	16,4	22,7	0,001	**0,0391**
A5	28,3	**106,9**	0,036		**10,0**	16,5	23,3	0,002	**0,0399**
Mean	---	**105**	---	---	**10,0**	---	---	---	**0,0392**

* - Referred to the initial mass (after previous conditioning at 23/50)

4 — REMARKS

Results presented in this report relate exclusively to the tested specimens of the products under the particular conditions of the test.

Tests have been performed using a HOLOMETRIX, model RK-80 RAPID - K, heat flux meter apparatus.

This heat flow meter apparatus is regularly calibrated by LNEC/LEPC at a mean test temperature of 10 ºC. This internal calibration is performed using reference material ***IRMM-440***. *Resin Bonded Glass Fibre Board* provided by the Institute for Reference Material and Measurements (IRMM).

Written *Calibration Procedures* and calibration curves are kept in the archives of LNEC/LEPC.

Last internal calibration was performed in 2008-11-27.

LISBON, 13th April 2009

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