

TEST REPORT

RE0624FB-015

Client : CHAUX & ENDUITS DE SAINT ASTIER (CESA)

Customer address : 28 bis Route de Montanceix, La Jarthe
24110 Saint-Astier

Quote reference : DC23/047

CODEM agent : Florent Bordet

Subject : Determination of the thermal resistance by the fluxmeter method

Reference document(s) NF EN 12667 : 2001

Number of samples provided by the customer : 1

Date of receipt of samples : 28/08/2023


Localisation of the test : Laboratoire



Written by :

Name : Florent Bordet

Function : Laboratory testing and R&D project manager


Visa : 

Date 17/06/2024

Approuvé par :

Name : Boubker Laidoudi

Function : Technical manager

Visa : 

Date 17/06/2024

The results are valid only for the material(s) tested as defined in this document.

This test report contains 6 Pages
0 Annexes

NB: the materials used to carry out these tests are kept at CODEM for 3 months after the date on which the test report is sent. After this date, they are destroyed by CODEM if the client does not wish to recover them (at his expense)

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SUMMARY OF RESULTS

The thermal conductivity measured using the flux meter method gives the following results :

Identification of the test specimen	Customer reference	Reference FRD-CODEM	Average test temperature (°C)	Measured value of thermal conductivity (W/(m.K))	Uncertainty of measure (W/(m.K))
Enduit léger	NOVASKIN THERMO PLUS	ER23-086	9,94	0,0793	0,0047

Presence of flatness defects (in relation to the requirements of standard NF EN 12667 : 2001) : Non

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1 DESIGNATION

Customer references	References FRD-CODEM	Sample mass on receipt (g)	Any other information given by the client :
NOVASKIN THERMO PLUS	ER23-086	2553,30	-

2 CHARACTERISTICS

The physical characteristics of the test specimens were determined after oven drying and conditioning to equilibrium.

These characteristics are summarised in the following table :

Specimen reference	Dimensions			Density (kg/m ³)	Test date	Duration of the test (hh:mm:ss)
Reference FRD-CODEM	Average length L (m)	Average width I (m)	Average thickness (m)			
ER23-086	0,299	0,300	0,086	327,15	29/9/23	02:34:50

Thickness of test piece(s) : Measured at FRD-CODEM

Possible product standard : No

Material : Rigid

Surfacing of test piece(s) : No

3 CONDITIONS OF REALIZATION

Environmental conditions : $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$

The instruments used for these measurements are :

- A Lambdameter with two fluxmeters (reference EQC08-001)
- A drying oven : 700L/300°C (Référence EQC18-001)
- A scale of : $7\text{kg} \pm 0,1\text{g}$ (Référence EQC09-006)
- A scale of : $7\text{kg} \pm 0,1\text{g}$ (Référence EQC11-005)
- A caliper of : 450 mm (référence EQC11-009)
- A thickness measuring instrument (EQC16-011, EQC16-011A)
- A filming machine (EQC15-018)

4 METHOD

FRD- CODEM uses the fulxmeter method for measuring the thermal conductivity of materials. The instrument used is a twa-flux Lambdameter with a single sample as show in Figure 1

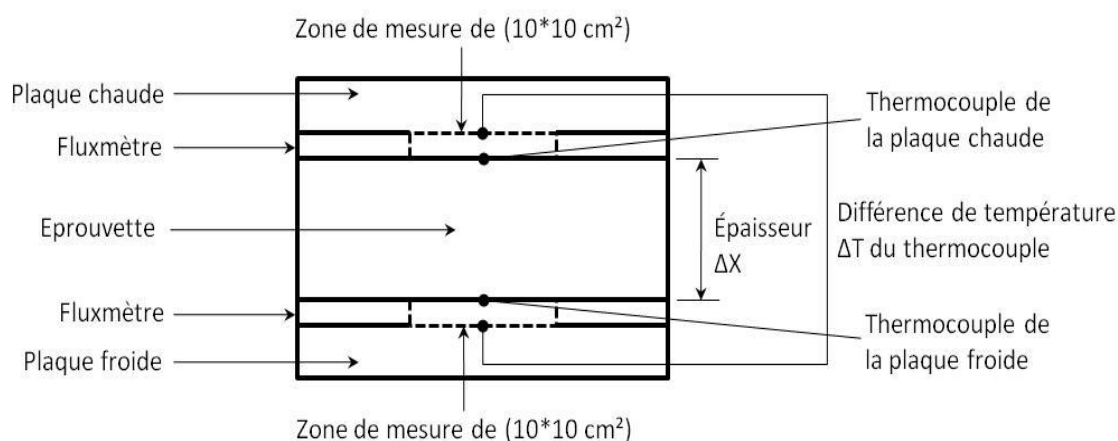


Figure 1 : Schematic of the dual-flow meter device

In the dual flux meter apparatus, the heat flux density is measured with two flux meters placed against in the specimen (the hot plate is above the specimen and the cold plate below)

The fluxmeter has a symmetrical horizontal configuration with a single test piece.

The apparatus used by FRD-CODEM for the measurement of the thermal conductivity was made according to ISO 8301 and NF EN 12667.

The preparation of the samples and the performance of the measurements are carried out in accordance with the standard NF EN 12667 and the internal operating procedure MO-ESS-013.

Date of last flux meter calibration

20/01/2023

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5 RESULTATS EXPERIMENTAUX

Conditioning of the material before testing : drying at 80°C

Relative variations in mass and thickness :

References FRD-CODEM	Condition							
	Drying of the specimens			relative humidity conditioning		Test		
	Mass at reception (g)	Mass after drying (g)	Relative change in mass (g)	Mass after conditioning (g)	Relative change in mass (g)	Mass before test (g)	Mass at end of test (g)	Relative change in mass (g)
ER23-086	2553,30	2523,80	-29,50	-	-	2523,80	2525,90	2,10

Changes in thickness (and volume) observed during the test: No

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The average thermal conductivity obtained between the hot and cold plates gives the results shown in the following table :

Thermal conductivity obtained at : 10°C dry

Customer reference	Reference FRD-CODEM	Heat flux density $F=N*V$ (W/m ²)	Average test temperature (°C)	T° difference (°C)	Measured thermal conductivity value (W/(m.K))	Measurement uncertainty (W/(m.K))
NOVASKIN THERMO PLUS	ER23-086	17,89	9,94	20,13	0,0793	0,0047

Special condition requested by the client : No

Flatness defects :

Customer reference	Reference CODEM	Flatness defect (yes/no)	Dimensions (mm)	Detail defect, comment
NOVASKIN THERMO PLUS	ER23-086	Non	-	-

The expanded uncertainties are twice the combined standard uncertainty. The standard uncertainties have been calculated taking into account the different uncertainty components, reference standards, calibration media, contribution of the calibrated, repeatability, ect.

Legend : NA = no applicable

End of the test report