TEST REPORT

Omega Test House
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Isofoam South Africa (Pty) Ltd
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SANS 8301:2010 Thermal Insulation Test – Thermal Conductivity

1 Executive Summary

Isofoam South Africa (Pty) Ltd submitted a section of Flex building system wall for testing to determine the thermal conductivity in accordance with SANS 8301.

The thermal conductivity was measured to be 0,02624 W/m.K

Refer to clause 12 of this report for a detailed analysis of the results and clause 13 for the validity of this report and the results contained in it.

2 Sample Description

The sample consisted of an approximately 300 mm wide by approximately 300 mm long and approximately 50 mm thick section of Isoboard XPS thermal insulation board. The manufacturing date and sample history prior to receipt is unknown.

Product trade name: Isoboard 50 mm

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4 Scope of work

The test applicant requested that the sample be tested to determine its thermal conductivity in accordance with SANS 8301.

5 Test Methods

The sample was conditioned and tested using the test method and equipment described is SANS 8301.

6 Subcontracting

No testing was subcontracted to external laboratories.

7 Abbreviations

SRM: Standard Reference Material used for verification and calibration of heat flow meter instrument.

SANS 8301: The South African national standard titled *"*Thermal Insulation – Determination of steady state thermal resistance and related properties – Heat flow meters*"*, edition 1 of 2010.

8 Accuracy of results

The calculated uncertainty of measurement for this test method was determined to be less than ± 3 % of the reported result with a coverage factor k=2 and a confidence level of 95%.

9 Equipment used

Lasercomp Fox 314 heat flow meter utilizing two thin film heat flux transducers symmetrically on one test specimen orientated in the horizontal position with heat flow in the vertical direction.

The instrument was last calibrated on 2021/01/22 using SRM having the following details:

SRM identification:	NIST 1450d SRM fibrous-glass board having serial number 264
Date of SRM certification:	2012/01/20
Expiration of SRM certification:	Valid indefinitely
SRM nominal thermal resistance:	0,03270 W/m.K at 23°C (SRM valid for 280 K to 340 K)

10 Sample submission details

The sample was received by Omega Test House on: 2022/04/20

The sample was inspected and found to be suitable for testing.

11 Test specimen preparation and conditioning

The test specimen was conditioned at ambient lab conditions for 73 hours to constant mass prior to testing. No mass loss or gain was observed during conditioning.

12 Test results

Test parameter	Result
Date of test (YYYY/MM/DD)	2022/04/25
Conditioned mass of specimen (g)	173,85
Calculated density of specimen (kg/m³)	37,2
Direction of heat flow	Downwards
Upper plate temperature (°C)	36
Lower plate temperature (°C)	10
Average temperature (°C)	23
Temperature difference (°C)	26
Temperature gradient (°C/m)	501,2
Measured heat flux (W/m²)	13,15
Specimen thickness as tested (mm)	51,88
Duration of test (minutes)	38
Measured thermal conductivity (W/m.K)	0,02624
Calculated thermal resistance at tested thickness (m².K/W)	1,98
Relative mass change of specimen during test (%)	~ 0

13 Validity of this report

This report refers only to the sample submitted to Omega Test House. This report has no bearing on production versions of similar products.
This report reflects only the description of work described in clause 4 of this report.
Omega Test House cannot be held liable for any information contradicting any statement in this report, that falls outside of the scope of work.

This report was compiled based on the information available at the time of the evaluation. Should any information become available that contradicts statements in this report Omega Test House reserves the right to amend such statements.

Name: **Arno van der Walt**
Designation: **Test Officer**
Date: **2022/04/26**