

TEST REPORT

Your ref : 41717
Our ref : FHT/46166/19
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Report : BCT-190918-00041
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SHOPSPEC LIGHT STEEL FRAME BUILDERS
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THERMAL INSULATION – DETERMINATION OF STEADY-STATE THERMAL RESISTANCE AND RELATED PROPERTIES – HEAT FLOW METER APPERATUS SANS 8301:2010

1. OBJECTIVE OF TEST

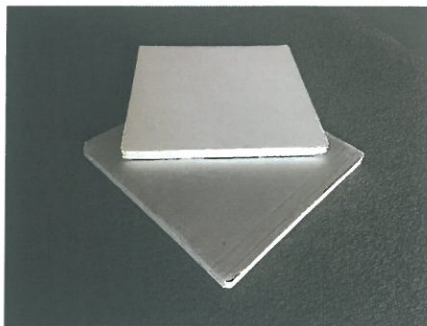
Refer to the print on the bottom of this page.

The sample described was tested to determine its thermal resistance and related properties by means of a heat flow apparatus in accordance with SANS 8301: 2010 "Thermal Insulation – Determination of steady-state thermal resistance and related properties – heat flow meter apparatus"

2. DESCRIPTION OF SAMPLE

Manufacturer: Späni
Product trade names: Spanl Mono Flat
Date received: 2019/08/12

One sample of thermally insulated panel/board material was received. The sample consisted of three sheets each being ± 300 mm long, ± 300 mm wide with a thickness of ± 16 mm. The boards consisted of PU foam insulation with a white steel facing on the one side and foil facing on the other. See below image of the sample as received tested. The date of manufacture, conditioning and sampling history prior to receipt of the samples is unknown.



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T0026

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3 NATURE AND METHOD OF TEST

Thermal Resistance and related properties determined in accordance with SANS 8301:2010.

The sample of material was found to be homogenous with regards to length and width. The sample was conditioned at laboratory environmental conditions for a period of a 72 hours prior to commencing with testing. No change in mass of the specimen was noted. The test specimen filled the entire test chamber during testing. The test chamber was sealed off from ambient for the entire duration of the test. Air cavities were present in the sample during testing.

4 EQUIPMENT USED

- 4.1 The test was conducted with a Lasercomp Heat Flow Meter utilizing two Thin-Film Heat Flux Transducers symmetrically on one test specimen.

Dates of test : 2019/08/21
 Duration of measurement portion of test : 25 minutes
 Laboratory environmental conditions : $22 \pm 5^{\circ}\text{C}$ and $50 \pm 10\%$ RH
 Date of last calibration of Lasercomp instrument : 2018/12/14 using 1450d SRM ID 264
 Position of the heat flow meter apparatus during testing : Horizontal

- 4.2 Tape measure. Calibrated Calcert. No. 17-4585
 4.3 Balance. Calibrated Calcert. No. 2018/B051
 4.4 Temp/%RH logger Calibrated Calcert. No. 730763(temp) 103855(%RH)

5 RESULTS

Table 1: Test results summary

Sample ID	Spänl Mono Flat
Mass (g)	248,0
Density (kg/m ³)	167,0
Tested thickness (mm)	16,5
Hot side temperature (°C)	36
Cold side temperature (°C)	10
Average temperature (°C)	23
Temperature difference (°C)	26
Temperature gradient (°C/m)	1212
Thermal conductivity (W/m.K)	0,02226
Thermal resistance at tested thickness (m ² .K/W)	0,74

Note 1: The test was performed with the heat flow direction as downwards.

Note 2: All measured masses were the same before and after testing.

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The reported uncertainty of measurement of $\pm 2,8 \%$ is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%, the uncertainty of measurement has been estimated in accordance with the principles defined in The GUM, Guide to Uncertainty of Measurement, ISO, Geneva, 1st edition, 1993
Assessment of Uncertainties of measurement for calibration and testing laboratories, RR Cook, 2nd edition, 2002
EAL-R2, Expression of Uncertainties of Measurement in calibration, European co-operation for Accreditation, 1999



A Van Der Walt
Technical signatory
FENESTRATION AND HEAT TRANSFER



J Maswikaneng
Manager
CIVIL TESTING

< END OF REPORT >

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