DI0031/01

Thermal Resistance of an Insulation Sample

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All tests reported herein have been undertaken at the BRANZ Ltd laboratories located in Judgeford, Porirua, New Zealand, unless stated otherwise.

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Thermal Resistance of an Insulation Sample

1.   CLIENT

NRG Building Systems Pty Ltd, 30 Binary Street, Yatala, QLD 4207, Australia

2.   DESCRIPTION OF TEST EQUIPMENT

The test equipment used was a LaserComp Fox 600 heat flow meter. The specimen for testing is placed horizontally in the apparatus, with upwards heat flow. The hot and cold plates each have a 250 mm x 250 mm heat flux transducer embedded in their surface. The edges of the specimen are insulated from the room ambient temperature.

3.   PROCEDURE

The specimen was supplied by the client and consisted of one piece of light green polystyrene. The dimensions of the sample were 595 x 595 mm. It was tested at its actual thickness, to the requirements of ASTM C518-04.

4.   RESULTS

Nominal Upper Plate Temperature	13 °C
Nominal Lower Plate Temperature	33 °C
Nominal Difference in Temperature	20 K
Nominal Mean Temperature	23 °C

Calibration check	20-Apr-09, EPS 01	
BRANZ reference		D4393
'grams per sq. metre'		1325
Sample weight	gram	469
Test date		22-Apr
Test thickness	mm	72.7
Density	kg/m^3	18.2
Temperature difference	K	20.0
Mean temperature	°C	23.0
Heat-flux	W/m^2	10.67
Thermal resistance (for four pieces)	m^{2}K/W	1.874
Thermal conductivity	W/mK	0.0388
Difference between heat flux transducers	%	0.1

These measurements comply with the requirements of ASTM C518. The uncertainty in the measurements of thermal conductivity and thermal resistance are estimated to be ± 3%.

5.   REFERENCES

ASTM C518-04 *Standard Test Method for Steady-State Heat Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.*
American Society for Testing and Materials, Philadelphia, PA, 2004.

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