TEST REPORT

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SERIAL NUMBER **49700THB**

0357

REPORT PREPARED BY

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AUTHORISED BY

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CLIENT: Boulder Developments Ltd.
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JOB No: T149700

1 INTRODUCTION

The test specimen was supplied by the client and described as Boulder Developments 40mm nominal SuperFOIL Sample B. It was delivered in the form of a 600mm x 600mm x 40mm multifoil.

2 METHOD

Heat Flow Meter Method of ISO 8301 : 1991 and BS EN 12667 : 2001 using the BBA single specimen symmetric test facility designated K4. Edge guarding is provided by an independently heated zone at the perimeter of each plate and apparatus wall temperatures controlled to match the mean specimen temperature. Specimen thickness was measured in accordance with BS EN 823.

3 SPECIMEN PREPARATION

The test specimen was assigned the BBA designation number T149700/2 and stored in a well-ventilated position in an air-conditioned room at 23 ± 2ºC, 50 ± 5% rh until it was tested.

4 MEASURED PROPERTIES

Thermal resistance per layer m^2-K/W	Density kg/m^3	Mean temperature (ºC)
1.31 ± 2.5%	31.2	9.9

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor *k*=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with ISO/IEC 17025:2005.

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8 ADDITIONAL INFORMATION (not covered by UKAS Test Schedule)

The emissivity of the foil itself has not been measured. The client stated the emissivity value for the foil as 0.03. The thermal resistance value (based on this emissivity value) for the airspaces and product + airspaces, calculated to annex B.2 (Unventilated airspaces with length and width both more than 10 times thickness) of BS EN ISO 6946 : 2007 - are given in the table below.

Emissivity, ε	Thermal resistance (horizontal heat flow – up to 30° from horizontal plane) (m^2-K/W)[1][3]		Thermal resistance (vertical heat flow – up to 30° from horizontal plane) (m^2-K/W)[1][3]	
0.03	13mm Airspace	13mm Airspace + specimen[2] + 13mm Airspace	13mm and greater Airspace	≥13mm Airspace + specimen[2] + ≥13mm Airspace
	0.48	2.27	0.48	2.27
	20mm and greater Airspace	≥20mm Airspace + specimen[2] + ≥20mm Airspace		
	0.71	2.73		

[1] Assuming: mean cavity temperature, T_m=10°C; temperature drop across the cavity, ΔT=5K; and alternate face of airspace has emissivity, ε=0.90
[2] Assuming: Thermal resistance of specimen is 1.31m^2K/W as given above
[3] These R values are for illustrative purposes only and have been calculated using the client emissivity values. Therefore they should not be used as design values