

Thermal Conductivity of Retrofoam Samples carried out by Dr. Paul Baker,
GCU
For MMB Developments Ltd.

Measurements carried out using Lasercomp FOX304 Instrument Serial

Number: 1044

The samples were produced from a resin (batch number 230001268) and a foaming agent (batch number C804136).

Nominal test conditions

Hot Plate Temperature °C 15
Cold Plate Temperature °C 5
Mean Temperature °C 10

Retrofoam Sample No.	Sample Thickness mm	Density kg/m ³	Test Date	Mean Temp °C	Thermal Conductivity W/mK
#1	85.36	23.94	20/04/2015	10.01	0.031
#2	82.80	25.52	22/04/2015	10.01	0.033
#3	83.47	24.83	23/04/2015	10.01	0.034
#4	83.01	26.51	23/04/2015	10.01	0.031
#5	81.35	24.75	28/04/2015	10.01	0.031
#6	83.00	22.43	29/04/2015	10.01	0.032

Accuracy of thermal conductivity measurements quoted by manufacturer ±2%

Minimum	0.031
Maximum	0.034
Average Thermal Conductivity W/mK	0.032
Standard Deviation W/mK	0.001
Standard Deviation %	4.5%
Average Density kg/m ³	24.66
Standard Deviation kg/m ³	1.39
Standard Deviation %	5.6%

GCU Reference Sample 09010655 measured before and after tests on Retrofoam

Date	Sample Thickness as measured by thermal conductivity apparatus mm	Thermal Conductivity W/mK
17/06/2014	24.63	0.0317
02/04/2015	24.64	0.0316
08/04/2015	24.64	0.0316
14/04/2015	24.64	0.0316
20/04/2015	24.66	0.0317
22/04/2015	24.61	0.0317
22/04/2015	24.61	0.0316
23/04/2015	24.61	0.0316
28/04/2015	24.64	0.0316
29/04/2015	24.63	0.0316
30/04/2015	24.61	0.0315

Average 24.63 0.0316
 Standard Deviation 0.02 0.0001
 Standard Deviation % 0.07% 0.2%

Difference from test result of Gearing Scientific at mean temperature of 10°C 0.0006 W/mK 2%