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Thermal Conductivity testing of Oxifree

Introduction

The Centre for Infrastructure Management (CIM) at Sheffield Hallam University was requested by Oxifree Global Ltd (from now on referred to as the client) to measure the Thermal Conductivity of their Oxifree polymeric resin.

Experiment

The test specimen consisted of a prism measuring approximately 180mm x 130mm x 19mm (Figure 1) obtained by cutting a larger slab of Oxifree material provided by the client. Thermal conductivity was measured using a methodology based on BS EN 12664:2001 (heat flow meter method). Average temperature difference across the specimen during testing was measured with thin thermocouples on the specimen surfaces. The mean test temperature was $\approx 10^{\circ}\text{C}$.



Figure 1 Test specimen

Results

The results of the test are as below:

Thermal Conductivity: 0.1216 W/mK

Heat Transfer Coefficient: 6.4 W/m²K



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