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# HEBRIDEAN HOUSING PARTNERSHIP

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ICYNENE FIRE TESTING

7/2/2012



**LOW** | CARBONCONSULTANTS

## Introduction

Icynene is an open cell spray-on insulation suitable for many applications, such as treatment of coomb areas, and between lath/plaster or plasterboard and block work.

Although this product is classed as combustible by the British Board of Agrément (BBA), it appears that no specific tests with regard to BS EN 13823:2002 (single burning item) or BS EN 11925-2 (small flame ignitability) have been carried out and recorded. While the process of arranging these tests is ongoing, this report highlights the fire properties of Icynene when subjected to heat and flame in an uncertified but realistic range of tests.

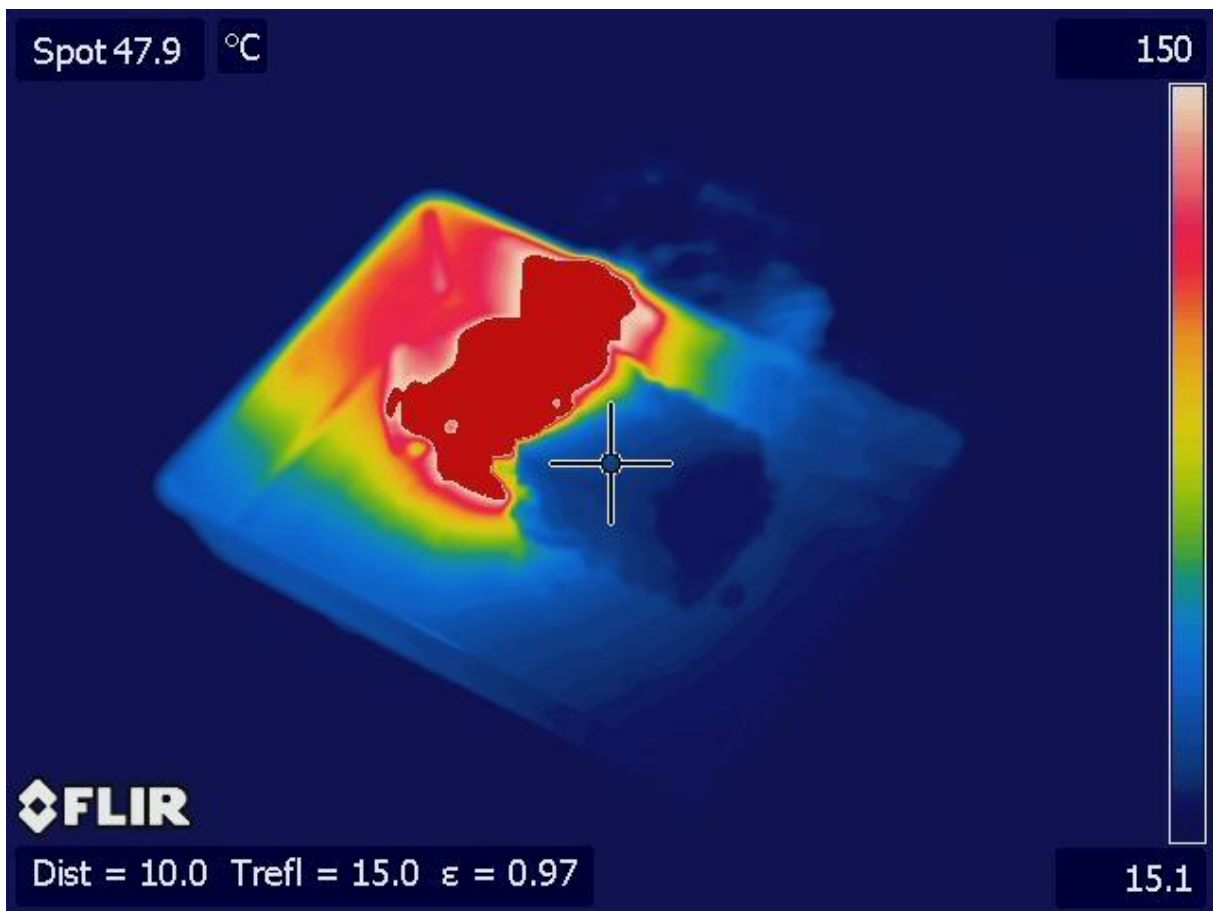
### Test 1 – close proximity to fire

A block of Kerosene soaked Urea Formaldehyde Resin was ignited and placed in close proximity to a sample of Icynene, this simulated a situation where an item of furniture such as a couch had ignited next to a wall where Icynene was present.



After a short space of time in close proximity to the fire the test sample of Icynene developed a hard black layer that proved to be fairly impenetrable by fire, after a further 5 minutes the fire had spread no further in to the test sample.

The thermal image below shows the sample after 5 minutes exposure to the fire. What is interesting here is that although the temperature in the heart of the fire is approximately 150°C, the spot temperature in the centre of the Icynene sample is only 48°C. This shows that in fire situations Icynene is reasonably effective in slowing both the spread of fire and the rate of heat transfer.



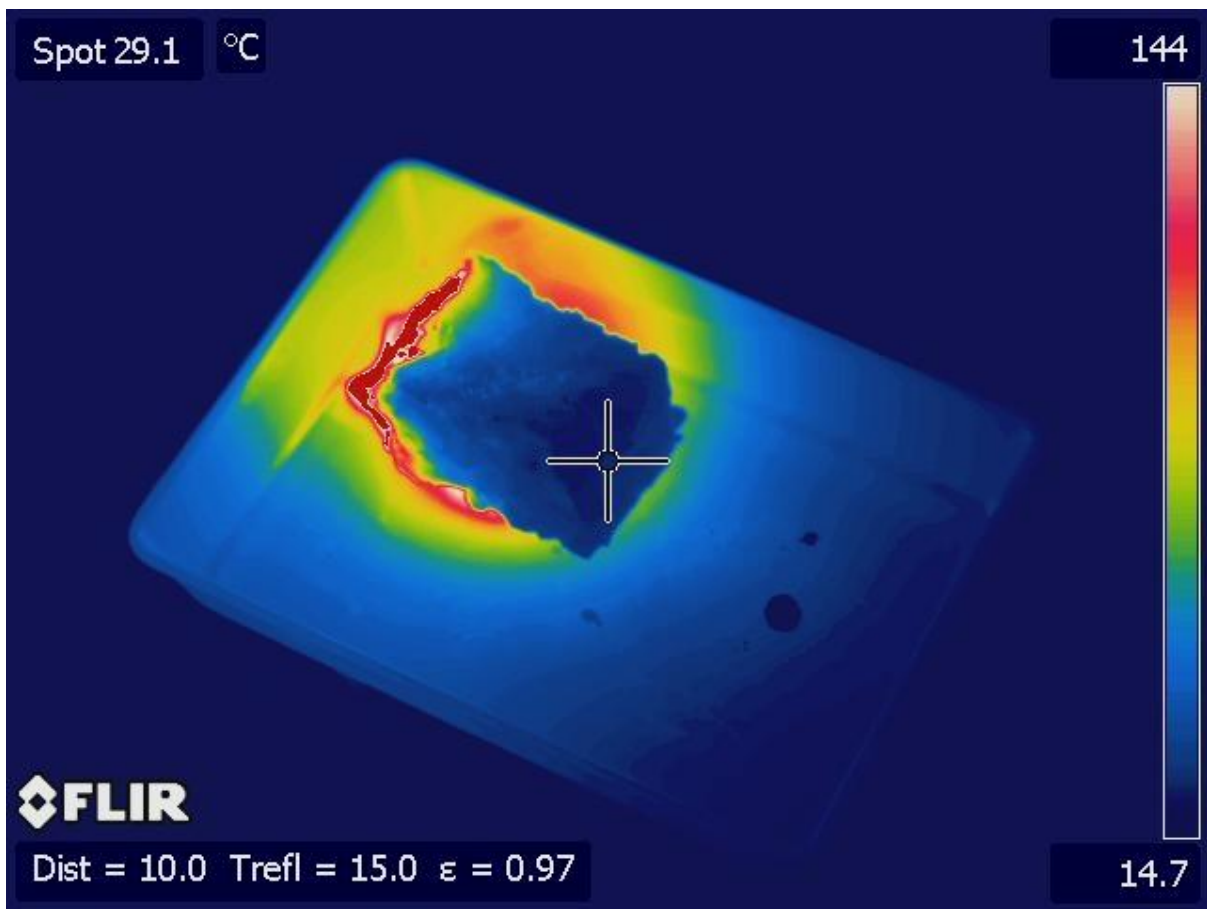
## Test 2 – Sample placed directly on top of the burning material

This test represents a situation where Icynene has been used to treat the coomb walls of a property and a fire has broken out directly under the coomb.



It was found during this test that the Icynene had a smothering effect on the fire, and although initially the outer face of the sample became quite heavily charred, the fire did not penetrate the sample.

This thermal image shows again that although the temperature at the heart of the fire is in excess of 140°C, the spot temperature at the furthest corner of sample from the heat source was recorded as only 29°C.



After approximately 2 minutes of direct contact on top of the flame, the Icynene smothered and extinguished the flame.



These results show that although Icynene is classed as a combustible material by the BBA, in the simple tests carried out for this report it performed very well as a fire break, resisting the spread of fire and slowing the heat transfer rate significantly. These trends should be replicated when the BS EN 13823:2002 (single burning item) or BS EN 11925-2 (small flame ignitability) have been carried out and fully validated results are produced.