

# PBI Gold delivers best performance in burn test

Most companies test their products against rival offerings, but it takes absolute confidence in the performance of your product to hand it to an independent tester and then invite your customers along to see how they compare. That's exactly what PBI Performance Products Inc did recently in Manchester, writes John Morton, Director, Morcom solutions, who attended the test.



The eight second burn test was undertaken on the 2006 version of the male heat sensing manikin known as RALPH

The company hosted 12 delegates from six UK fire and rescue services at the British Textile Technology Group (BTTG) test lab in Manchester. BTTG is a well known and long established test facility and the Manchester lab specialises in testing materials and clothing used in the manufacture of Personal Protective Equipment (PPE).

UK fire and rescue service delegates were invited to see a burn test comparison, undertaken by BTTG, between two sets of structural fire kit made from PBI Gold® 205gsm and a 220gsm filament backed meta aramid being used presently in the UK. Ian Callaghan, UK Sales and Marketing Manager at PBI, said, "Both of the fabrics are well known in the UK and in use with different brigades. We know that PBI Gold offers unique performance standards and wanted to invite people into an independent environment to let the fabric speak for itself in a controlled test."

PBI's confidence in its product was justified as the

PBI Gold fabric, despite being 15gsm lighter than the other fabric, still delivered a higher level of burn protection. Based upon the test results, the overall burn injury prediction using PBI Gold outperformed the other fabric by 8%.

## Distinctive differences

One of the most distinctive differences that the test highlighted was the way in which the fabrics changed. Both fabrics, having experienced the extremes of 1000 degree flame, were charred, however the PBI Gold suffered no shrinkage, maintained its original strength and remained extremely soft and pliable to the touch. There was no break up in the PBI Gold and as well as retaining most of its colour, the fabric showed no signs of brittleness or significant degradation.

It was obvious to anyone handling the garment made from PBI Gold that the fabric offered higher standards of heat protection, durability and impressive integrity after exposure to extreme heat and flame.

"The test results re-affirmed the impressive levels of protection and performance that PBI Gold delivers. Both garments were made to exactly the same design, the only difference being the outer fabric. This is the only way to make a true valid comparison," added Callaghan.

It is essential to the integrity of a performance test that all fabrics are compared in exactly the same way, using identical designs, in the same test centre. The complexity of burn tests is such that different test cen-

tres might produce the same relative results, but the overall difference should remain the same. This means that if one fabric performs better than the other by a considerable margin, it will continue to do so in another centre.

## Eight second burn

The eight second burn test was undertaken on the 2006 version of the male heat sensing manikin known as RALPH, which was developed by BTTG and conforms to ISO 13506. For the test the hands and head were not used, leaving 123 sensors on torso, arms, legs that monitor the temperature on the surface of the manikin during the test.

During the test the manikin was challenged by a flame engulfment apparatus that consists of two tiers of six burners that create heat flux of 84kW/m<sup>2</sup>. The garment was exposed for eight seconds and data from the sensors was collected for two minutes.

PBI claims to be the world's leading inherently flame resistant and thermally stable fibre for outer shell fabric, combining the highest standards of protection, comfort and durability. The test event in Manchester underlined that message and showed that the company is prepared to let actions speak louder than words.

PBI Performance Products Inc's international website ([www.pbiproducts.com/icp](http://www.pbiproducts.com/icp)) contains detailed information about its performance and durability along with videos of similar manikin tests.

**Reader Reply No.98**



One of the most distinctive differences that the test highlighted was the way in which the fabrics changed