In what could be termed a PACT between the firefighter and his or her employer, these four elements are Protection, Agility, Comfort and Trust. It will be a combination of these four attributes associated with their PPE that will provide the firefighter with the highest possible level of wearer confidence and which, at the same time, will be the measure of a responsible and caring employer.

But, how do we define these four key elements in such a way as to ensure that the full benefits of the PACT between employer and employee are realised?

Protection is what is uppermost in our minds when we look at PPE – it goes to the heart of all personal protective equipment. It is measured independently against national, regional or international standards, devised and agreed by experts in their field and empirically tested through the use of robust test procedures on a wide range of PPE. Here, we are particularly concerned with the protection offered by firefighter clothing. By using the best available fibres woven into class-leading fabrics, manufacturers are able to bring the protective qualities of each into multi-layered combinations that provide the prime protective qualities required by the wearer in any given hazardous situation.

Agility and comfort do have some aspects in common but, as far as the wearer is concerned, are different features. Agility focuses on the desirability of having firefighters capable of being able to move easily and swiftly away from danger when working on the fireground, which requires clothing to be flexible and light enough to effectively carry out rapid escapes, where necessary. Comfort, on the other hand, is achieved by providing coats and trousers that fit well, are shaped effectively to body contours, equally well for males and females, and the wearing of which provides the minimum of fatigue when worn for long periods.

Trust is the last element of the four and relates to the physical and performance integrity of the clothing. By providing an integrated
managed service, manufacturers can ensure that the performance characteristics, present in any PPE when it is new, remain intact throughout the service life of the garments. Through regular inspection, repair, washing and decontamination, the protective qualities of individual items of clothing can be assured, which will instil a level of trust among firefighters in both their garments and their employers who will be seen to have the safety of their employees as a high priority.

Bristol’s PACT with firefighters who wear their PPE has developed over recent years from the introduction of the Ergotech designs some ten years ago, along with their lifetime managed services, to the most recent introduction of the innovative XFlex designs. The basic principle, which takes comfort and flexibility to a new level, through the advanced design offering improved articulation at key body flex points combined with a range of Hainsworth ECO-dry thermal liner options, is now incorporated into a range of PPE including structural firefighting clothing as well as new USAR kit and incident ground kit for the nation’s ambulance HARTs.

Internationally, the comfort and high performance features provided by Bristol’s Ergotech Action design were key factors in the decision of Australia’s Air Services ARFF to re-equip its 650 firefighters, stationed at 21 of the country’s busiest airports, with Bristol’s PPE, which was deployed in early 2010. PAC Fire, Bristol’s Australian distributor, worked closely with Bristol to submit a tender based on the lightweight ErgoTech Action design incorporating a Pbi Gold outer-layer with Gore-tex Airlock thermal and moisture barrier. A number of changes were introduced to the garment’s features to make them ideal for Australian conditions, which enabled the two companies to secure the contract. The initial 1400 sets of fire coats and trousers were chosen on a combination of factors including the overall performance of the Bristol garments, their certification to Australian standard AS4967 and the high total-heat-loss readings all of which met the high specification set by ARFF.

In addition to the supply of the PPE, a fully certified maintenance service will also be provided. PAC Fire has contracted a partner company, fully certified by Bristol, to carry out repairs and decontamination. All ARFF structural garments are fitted with an RFID computer chip that allows ARFF, PAC Fire and the contractor to monitor and condition-code every garment throughout its service life.

Keith Ward, PAC Fire’s managing director said at the time the new kit was brought into service: “ARFF is now one of the best PPE equipped fire brigades in Australia and should be congratulated on its efforts to improve the level of personal protection for its aviation firefighters deployed across the country. ARFF now has a leading-edge technical garment that will serve it well for many years”.

Ivan Rich, Bristol’s Technical Manager and Project Leader for the planned new European Standard for firefighter technical rescue PPE, commented: “Following requests made by several countries in Europe, a new work item has been agreed to develop a new European standard to cover technical rescue and other firefighter activities excluding structural fire fighting. It is recognised that in many cases firefighters have been over protected while carrying out their duties. Overprotection has led to discomfort and fatigue, which has given the wearer a new hazard to consider.”

Dave Matthews, who chairs and leads on all BSI, CEN and ISO Protective Clothing Committees impacting firefighters, commented: “In the European Union (CEN) and International (ISO) Standards Committees responsible for firefighters PPE, comfort, thermal protection, compatibility and physiological aspects are now uppermost in standards writers’ minds. How we best address these matters is always going to be a compromise of thermal protection versus comfort. The quality PPE manufacturers are continually striving for innovative solutions and comfort and physiology are now testing their R & D. prEN 469, which successfully passed its First Enquiry ballot by 17 votes to two, will now see a Physiological Annex inserted as an Annex. This was prepared by myself and Leeds University. Under my CEN committee for Heat and Flame Protective Clothing TC 162 WG2, I have appointed a Project Group led by Dave Frodsham of W. L. Gore to assess the problem and make recommendations on the Annex. I fully expect improvements to be made during the next CEN ballot stage”.

He added, “I would wish to remind PPE manufacturers that, in fact, firefighters are human beings and dressing them in relatively heavy PPE and sending them into a very hot humid environment leads to sweating, a natural method of the body to attempt to cool itself. We will only ever go so far, and this is the balance we strive to achieve”.

For further information, go to www.bristoluniforms.com