

PPE standards: keeping UK firefighters safe

Despite the pandemic, committees in the UK and Europe have continued their vital work to review and update firefighter personal protective equipment (PPE) standards.

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Currently, in the UK, PPE standards are set by the International Standards Organisation (ISO), the European Committee for Standardisation (CEN), and our own National Standards Body, the British Standards Institute (BSI). They all work closely together, and conformity to European regulations and standards will continue for at least a year after the UK's departure from the EU on 31 December 2020, while a decision is made about how things will be structured in the future.

Contrary to popular belief, PPE standards are voluntary, but it's in everyone's interest to adhere to them. In Europe, for example, manufacturers that adhere to EN469: 2020 Protective clothing for firefighters - Performance requirements for protective clothing for firefighting, automatically comply with PPE Regulation EU 2016/425: compulsory for all PPE bought and sold in the EU. In turn, fire and rescue services (FRSs) purchasing PPE can be confident that it meets the minimum levels of performance requirements, and that PPE is of good quality, fit for purpose and adequately protective.



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PPE Regulation EU 2016/425 came into force in April 2018, replacing the previous PPE Directive EC 89/686. FRSs opting for new fabric combinations or PPE ranges should now get a comprehensive PPE risk assessment that clearly states how well the garment protects firefighters from identified risks of the job, plus a Certificate of Conformity to the new Regulation. From 21 April 2023 this will be extended to existing certified fabric combinations and PPE ranges like Bristol's XFlex. In the meantime, the Certificate of Conformity to the old Directive remains valid.

Added reassurance

From 21 April 2023, it will also be mandatory for PPE to clearly bear a CE mark, serial number and the manufacturer's name and address. Technical documentation and the Certificate of Conformity will also have to be readily available for 10 years, and all PPE will come with user instructions in the buyer's native language. It will be against the law for anyone to sell non-conforming PPE. For FRSs, these changes further

strengthen the safety and quality of PPE, and provide added reassurance that PPE being sold is fit for purpose and meets all appropriate standards.

To ensure standards remain current, they are regularly reviewed, updated and republished. An example is EN 469: 2020 Protective clothing for firefighters - Performance requirements for protective clothing for firefighting. I am Secretary to this committee, as well as providing specialist advice and guidance on firefighter PPE. The updated standard was published in mid-August and simplifies some testing processes, for example the resistance to liquid chemical penetration test, and removes some more subjective tests for things like surface wetting.

BSI/CEN standards expert Dave Matthews has been involved in the development of this standard. He said, "EN 469 has been updated to reflect the changing role of firefighters, and to improve the accuracy and consistency of testing. The revision has taken a lengthy period, due to the interest in this standard. It will continue to ensure that all conforming PPE is fit for purpose and protects firefighters from the hazards of the job."

Cleaning and maintenance standards

There are also standards that cover cleaning and maintenance of PPE. Last year, BSI published a new Code of Conduct: BS8617: 2019 Personal protective equipment for firefighters - Cleaning, maintenance and repair. It has the status of a standard and was introduced in response to mounting evidence that contaminated PPE increases a firefighter's risk of developing cancer. This standard provides clear guidance on the cleaning, maintenance and repair of firefighters' PPE (garments, helmets, gloves, footwear and fire hoods), to reduce the

potential health and safety risks associated with poorly maintained, contaminated, or damaged equipment.

In parallel to this, the International Standards Organisation (ISO), which sets standards worldwide, is also developing a new international standard for cleaning and repair of PPE, of which I am Joint Project Leader. ISO 23616 Cleaning Inspection & Repair of Firefighters PPE will cover garments, helmets, gloves, footwear, fire hoods and respiratory protection devices – the latter of which gets the most contaminated and is the most difficult to clean. The aim is to seek approval of the initial draft towards the end of 2020, with a view to publishing it in late 2021 or early 2022.

Common European and International standards

Other standards currently being reviewed include EN 13911: 2017 Protective clothing for firefighters - Requirements and test methods for fire hoods for firefighters. This European standard specifies the minimum safety requirements and test methods for fire hoods. A draft standard is currently being prepared and the revision and approval process will follow.

Increasingly, CEN and ISO develop common European and international standards. These EN/ISO standards are automatically and identically implemented across Europe and the world. An example includes EN ISO 15384: 2020 Protective clothing for firefighters - Laboratory test methods and performance requirements for wildland firefighting clothing. This ISO standard was updated back in 2018 but has recently been published as an EN ISO standard replacing EN 15614: 2007. Bristol makes wildland fire fighting PPE, which can be used in wildfire scenarios and we're currently working towards getting them certified to this new standard.

Plans are afoot to revise both EN ISO 13506: 2017 Protective clothing against heat and flame – Part 1: Test method for complete garments – Measurement of transferred energy using an instrumented manikin and ISO 13506: 2017 Protective clothing against heat and flame – Part 2: Skin burn injury prediction – Calculation requirements and test cases. These standards specify the overall requirements, equipment, and calculation methods for evaluating the performance of complete garments or protective clothing ensembles exposed to short duration flame engulfment. Trials are currently being carried out under a confidentiality agreement. It should be noted that Part 2 is likely to become an EN ISO.

As you can see, despite the pandemic a lot of work is going on behind the scenes to review, revise and publish new standards. These standards not only help manufacturers conform to PPE regulations, they also provide UK fire and rescue services with the confidence that they are buying safe, quality PPE.

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