



The Organisation for Emergency Services Management

ADDENDUM to

The JOIFF HANDBOOK on PERSONAL PROTECTIVE EQUIPMENT (PPE) to protect against Heat and Flame.

Since the publication of the JOIFF Handbook on PPE to protect against Heat and Flame, we have received many comments and extra information on such PPE. We would particularly like to bring to readers' attention, comments received from the manufacturers of PROBAN(R), one of the chemicals used in the treatment of materials for flame resistance. We refer to Pages 30 and 31 of the official version of the Handbook, which is the copy that is on the JOIFF website for download, paragraph headed *Comparison between FR treated materials and inherently FR materials*.

Page 30, sub paragraph headed *F.R. treated materials*: The manufacturers of PROBAN(R) comment as follows:

The preferred choice of materials to which an F.R. treatment is given are cellulosic materials such as cotton or viscose. Cotton rich blends with synthetic fibres including aramid type fibres are also available. The FR treatment is applied to the fibre and /or material by the manufacturers proprietary system of application. This treatment can comprise up to a maximum of 22% of the finished material weight. Manufacturers of such treatments claim that when garments are cared for and maintained following the manufacturers instructions throughout their useful life, the material's F.R. properties will last for the expected lifetime of the garment.

Page 31 first paragraph on the top of the page. The manufacturers of PROBAN(R) comment as follows:

Tests of clothing manufactured in F.R. treated materials on a full sized manikin test rig replicate flame engulfment and show that at the decomposition temperature of the F.R. base fabric material, which is normally cotton, the F.R. system initiates. In the case of cotton this is around a temperature of 350°C.

The commonly used phosphorus and nitrogen based F.R. systems contain a condensed or solid phase flame retardant system which operates near to the fabric surface, through modification of the normal decomposition pathway of cotton. The F.R. system forms a protective carbon char which has a significantly higher level of strength than burned untreated cotton. As flash conditions vary between 200°C and 900°C it can be concluded that these materials may require a higher equivalent weight of base material to provide an equivalent level of performance.

We thank the manufacturers of PROBAN(R) for their comments and for their interest in ensuring accurate information is passed to Users.

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