



BSI Standards Publication

**Protective clothing for firefighter's who are engaged
in support activities associated with structural fire
fighting — Laboratory test methods and performance**

National foreword

This British Standard is the UK implementation of ISO 11613:2017.

The UK participation in its preparation was entrusted to Technical Committee PH/14, Firefighters' personal protective equipment.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Protective clothing for firefighter's who are engaged in support activities associated with structural fire fighting — Laboratory test methods and performance

*Vêtements de protection pour sapeurs-pompiers engagés dans
des activités de support associées à la lutte structurelle contre les
incendies — Méthodes d'essai et exigences de performance*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see the following URL: <http://www.iso.org/iso/foreword.html>

This document was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 14, *Fire-fighters personal equipment*.

This second edition cancels and replaces the first edition (ISO 11613:1999), which has been technically revised.

This edition has been completely rewritten as the Scope and title of this document have changed.

Introduction

The purpose of this document is to provide minimum performance requirements for protective clothing designed to protect firefighters who are engaged in support activities associated with interior attack firefighting.

This document is intended for firefighters who are engaged in support activities associated with interior attack firefighting. It is not intended for firefighters who are engaged in interior attack firefighting. Interior attack firefighting and support activities of firefighting are defined in [3.8.1](#) and [3.8.2](#).

It provides guidance on the considerations for conducting a risk assessment of firefighting risks (see [Annex A](#)).

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Protective clothing for firefighter's who are engaged in support activities associated with structural fire fighting — Laboratory test methods and performance

1 Scope

This document specifies test methods and minimum performance requirements for protective clothing used by firefighters who are engaged in support activities of firefighting. This clothing is not intended for interior attack firefighting. These support activities of firefighting are defined (see [3.8.2](#)) as activities such as:

- water and material supply;
- extinguishing fires from the outside of the structure;
- prevention of exterior spreading to adjacencies, preventing environmental damage and limiting effect of smoke;
- securing traffic and environment;
- first aid base activities;
- preparing the fire ground for subsequent activities;
- RPD replenishment tasks;
- assessment zone;
- BA communication;
- forward command post;
- evacuation;
- assist planning;
- assist logistics;
- assist communication;
- transportation.

This document covers the general clothing design, the minimum performance levels of the materials used, and the methods of test for determining these performance levels.

This document is not equivalent to ISO 11999-3, clothing worn by firefighters who are at risk of exposure to high levels of heat and/or flame while fighting fires occurring in structures. This document provides lower minimum level of protection.

Selection of the appropriate system of clothing is dependent on carrying out an effective risk assessment which identifies the hazards to be faced, evaluates the likelihood of those hazards, and provides the means to reduce or eliminate these hazards. Details of one example of a recommended risk assessment approach and some factors for consideration are included in [Annex A](#)

This document does not cover special clothing for use in other high risk situations such as specialized firefighting, or clothing for use in long term firefighting operations in high ambient temperature, for example bush, wildland, or forest firefighting where clothing according to ISO 15384 could be more

appropriate. It does not cover clothing for use in high-risk fire exposures, for example reflective protective clothing according to ISO 15538 could be more appropriate.

It does not cover protection for the head, hands and feet or protection against other hazards, for example chemical, biological, radiation and electrical hazards. These aspects can be dealt with in other standards.

NOTE Additional “fit for purpose” personal protective equipment to protect the head, hands, respiratory system and feet should be worn with clothing specified in this document and in majority of situations appropriate protection is also required to be worn. Firefighters need to be trained in the use and care of protective clothing covered by this document including an understanding of its limitations and of the other items of personal protective equipment that can be required depending on the risks encountered

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 811, *Textile fabrics — Determination of resistance to water penetration — Hydrostatic pressure test*

ISO 1421, *Rubber- or plastics-coated fabrics — Determination of tensile strength and elongation at break*

ISO 3175-1, *Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments — Part 2: Procedure for testing performance when cleaning and finishing using tetrachloroethene*

ISO 4920, *Textile fabrics — Determination of resistance to surface wetting (spray test)*

ISO 5077, *Textiles — Determination of dimensional change in washing and drying*

ISO 6530, *Protective clothing — Protection against liquid chemicals — Test method for resistance of materials to penetration by liquids*

ISO 6942, *Protective clothing — Protection against heat and fire — Method of test: Evaluation of materials and material assemblies when exposed to a source of radiant heat*

ISO 9151, *Protective clothing against heat and flame — Determination of heat transmission on exposure to flame*

ISO 13688:2013, *Protective clothing — General requirements*

ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method*

ISO 13935-2, *Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 2: Determination of maximum force to seam rupture using the grab method*

ISO 13937-2, *Textiles — Tear properties of fabrics — Part 2: Determination of tear force of trouser-shaped test specimens (Single tear method)*

ISO 14116:2015, *Protective clothing — Protection against flame — Limited flame spread materials, material assemblies and clothing*

ISO 15025:2016, *Protective clothing — Protection against flame — Method of test for limited flame spread*

ISO 17493, *Clothing and equipment for protection against heat — Test method for convective heat resistance using a hot air circulating oven*

ISO/TR 19591, *Personal protective equipment for firefighters — Standard terms and definitions*

ISO 20471:2013, *High visibility clothing — Test methods and requirements*

CIE 054.2, *Retroreflection — Definition and measurement*