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Station uniform for firefighters

Tenue de travail pour les pompiers

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Foreword

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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 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 94, *Personal safety — Personal protective clothing* , Subcommittee SC 14, *Firefighters' personal equipment*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document provides two levels of performance requirements for station uniforms that may be provided by agencies that should be worn under primary protection garments compliant with the relevant standards.

Level 1 is intended to provide limited protection and minimise harm through no melt and no drip performance of materials, when exposed to accidental heat or flame.

Level 2 is intended to provide minimum protection in case of flame impingement or heat exposure.

The level 2 garment can also be combined with additional garments to contribute to the primary protection, such as turn-out-gear described in ISO 11999-3. In this case, level 2 will fulfil the minimum heat and flame requirements of this document and the level 2 garment in combination with additional layers will fulfil the requirements of the specific primary protection garment for the specific higher level standard (e.g. turn out gear standards, wildland).

Station uniforms are intended to provide the highest comfort possible through the use of materials that meet required performance requirements and ergonomics of design.

This document is largely based on ISO 11612, which has been frequently used as a basis to develop and specify station wear.

Attention is drawn to ISO/TR 21808, which sets out guidelines for selection, use, care, and maintenance of protective clothing against heat and flame for firefighters.

The level of protection required should be determined using a risk assessment process (see Annex A).

Station uniform for firefighters

1 Scope

This document sets out minimum performance requirements for station uniforms for firefighters that are provided by agencies to be worn under primary protective garments compliant with the relevant standards.

NOTE A station uniform, as defined by this document, is understood to not be a formal uniform or parade uniform, which are not likely to be worn under primary protective firefighting garments.

Garments developed in accordance with this document complement the performance built into primary protection firefighting garments in terms of minimising impact on hindrance, metabolic heat and comfort.

This document specifies two levels of requirements for station uniforms:

— Level 1 specifies minimum no melting nor dripping requirements that provide no additional protection but ensure the firefighter is not harmed by the melting of station uniform materials in cases where heat or flames impinge the station uniform.

— Level 2 specifies heat and flame requirements to provide minimum protection. It can be combined with additional layers or garments to meet the requirements of a standard for a specific primary protection garment, this combination should provide improved protection and comfort.

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 105-B02, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*

ISO 105-C06, *Textiles — Tests for colour fastness — Part C06: Colour fastness to domestic and commercial laundering*

ISO 105-D01, *Textiles — Tests for colour fastness — Part D01: Colour fastness to drycleaning using perchloroethylene solvent*

ISO 105-E04, *Textiles — Tests for colour fastness — Part E04: Colour fastness to perspiration*

ISO 105-X12, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing*

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

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

ISO 6330, *Textiles — Domestic washing and drying procedures for textile testing*

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 11092, *Textiles — Physiological effects — Measurement of thermal and water-vapour resistance under steady-state conditions (sweating guarded-hotplate test)*

ISO 12947-2, *Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 2: Determination of specimen breakdown*

ISO 13688, *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 13938-1, *Textiles — Bursting properties of fabrics — Part 1: Hydraulic method for determination of bursting strength and bursting distension*

ISO 13938-2, *Textiles — Bursting properties of fabrics — Part 2: Pneumatic method for determination of bursting strength and bursting distension*

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

ISO 15025, *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*

EN 1149-1, *Protective clothing — Electrostatic properties — Part 1: Test method for measurement of surface resistivity*

EN 1149-3, *Protective clothing — Electrostatic properties — Part 3: Test methods for measurement of charge decay*

EN 1149-5, *Protective clothing — Electrostatic properties. Material performance and design requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TR 19591 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
hole
opening, break, or discontinuity of any size not present in the original structure of the test specimen's fabric caused by application of the test challenge (e.g. flame, abradant or abrasion)