ISO/FDIS 11999-6:2024(en)

ISO/TC 94/SC 14/WG 2

Secretariat: SA

Date: 2023-12-142024-xx

PPE for firefighters — Test methods and requirements for PPE used by firefighters who are at risk of exposure to high levels of heat and/or flame while fighting fires occurring in structures — Part 6: Footwear

Part 6: Footwear

Équipement de protection personnelle pour pompiers — Méthodes d'essai et exigences pour les équipements de protection personnelle utilisés par les pompiers qui sont à risque d'une exposition à des niveaux élevés de chaleur et/ou de flamme quand la lutte contre les incendies survient dans les structures — Partie 6: Chaussures

FDIS stage

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: + 41 22 749 01 11
EmailE-mail: copyright@iso.org
Website: www.iso.orgwww.iso.org

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ISO 20344, Personal protective equipment — Test methods for footwear

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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 document 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).

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~~This document was prepared by Technical Committee *[or Project Committee]* ISO/TC *[or ISO/PC]* ###, *[name of committee]*, Subcommittee SC ##, *[name of subcommittee]*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC ###, *[name of committee]*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).~~

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

This second edition of ISO 11999-6 cancels and replaces the first edition (ISO 11999-6:2016), which has been technically revised.

The main changes are as follows:

— ~~—~~Level A1 and A2 deleted to provide a single level of performance~~.~~;

— ~~—~~ ~~Insertion~~insertion of updated ISO 20345:2021~~ / ~~/Amd 1:2024 references;

— ~~—~~ ~~References~~references to ISO 20344:2011 and ISO 20345~~/44:~~:2011 ~~Deleted.~~ have been deleted;

— ~~—~~ ~~Chemical~~chemical resistant footwear requirements and method updated.

— ~~—~~ ~~Flame~~flame resistance requirements and method updated.

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— ~~Insulation~~insulation against Heat requirements updated.

~~Updated table 2 and 3~~

~~— Inclusion of~~

— Tables 2 and 3 have been updated.

A list of all parts in the ISO 11999 series can be found on the ISO website. 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.

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PPE for firefighters — Test methods and requirements for PPE used by firefighters who are at risk of exposure to high levels of heat and/or flame while fighting fires occurring in structures —

Part 6: Footwear

1 Scope

This document specifies the minimum design and performance requirements for footwear as part of personal protective equipment [PPE] to be used by firefighters, primarily but not solely to protect against flame and high thermal loads while fighting fires occurring in structures.

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.

<std>ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*</std>

<std>ISO 6942ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 6942:2022, Protective clothing — Protection against heat and fire — Method of test: Evaluation of materials and material assemblies when exposed to a source of radiant heat</std>

<std>ISO 15025, *Protective clothing — Protection against flame — Method of test for limited flame spread*</std>

<std>ISO 11999 ISO 15025, *Protective clothing — Protection against flame — Method of test for limited flame spread*

ISO 11999-1, PPE for firefighters — Test methods and requirements for PPE used by firefighters who are at risk of exposure to high levels of heat and/or flame while fighting fires occurring in structures — Part 1: General</std>

<std>ISO 20344:2021/Amd 1:2024, *Personal protective equipment — Test methods for footwear*</std>

<std>ISO 20344:2021/Amd 1:2024, *Personal protective equipment — Test methods for footwear — Amendment 1*</std>

<std>ISO 20345:2021/Amd 1:2024, *Personal protective equipment — Safety footwear*</std>

<std>EN 13832-1:2018, *Footwear protecting against chemicals — Part 1: Terminology and test methods*</std>

<std>EN 13832 ISO 20344:2021, *Personal protective equipment — Test methods for footwear*</std>

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ISO 20344:2021/Amd 1:2024, *Personal protective equipment — Test methods for footwear — Amendment 1*

ISO 20345:2021, *Personal protective equipment — Safety footwear*

ISO 20345:2021/Amd 1:2024, *Personal protective equipment — Safety footwear — Amendment 1*

EN 13832-1:2018, *Footwear protecting against chemicals — Part 1: Terminology and test methods*

EN 13832-3:2018, Footwear protecting against chemicals — Part 3: Requirements for footwear highly resistant to chemicals under laboratory conditions</std>

<std>ISO 13994, Clothing for protection against liquid chemicals — Determination of the resistance of protective clothing materials to penetration by liquids under pressure</std>

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20344:2021/Amd 1:2024, ISO 11999-1 and EN 13832-1 apply.

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

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

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

4 Classification, design and performance level

4.1 Classification

Footwear shall be classified in accordance with Table 1.Table 1.

Table 1 — Classification of footwear

Classification	Description
Class I	Footwear made from leather and other materials, excluding all-rubber or all-polymeric footwear
Class II	All-polymeric (i.e. entirely moulded) including all-rubber (i.e. entirely vulcanized) foot-wear

4.2 Design

Footwear shall conform to one of the designs C to E given in Figure 1.Figure 1.

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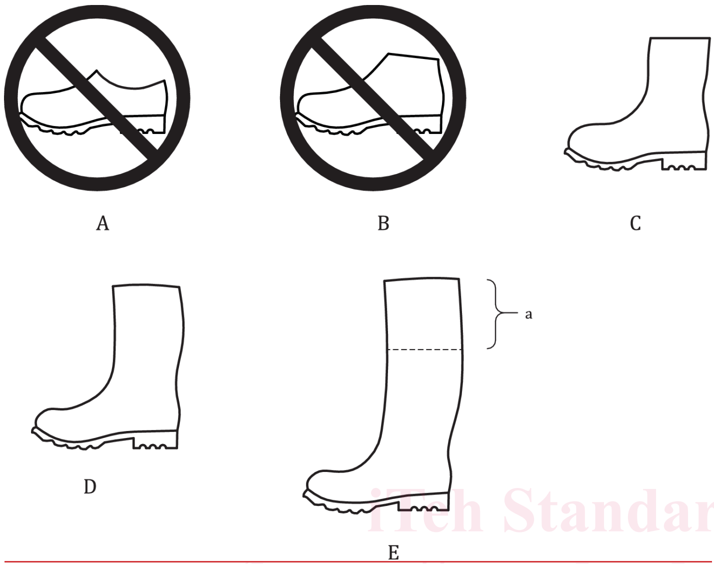

Key

A low shoe
B ankle boot
C half-knee boot
D knee-height boot
E thigh boot
[a] Variable extension which can be adapted to the wearer.

NOTE Design E can be a knee-height boot (design D) equipped with a thin impermeable material which extends the upper and which can be cut to adapt the boot to the wearer.

Figure 1 — Design of footwear

4.3 Innocuousness

Refer ~~Clause 5.3.6 of~~to ISO- 20345:2021 + ISO 20345:2021/Amd 1:2024, 5.3.6.

4.4 Sizing

Manufacturers ~~are to~~shall develop a ~~male and female~~ sizing range of footwear based on anthropometric data.

5 Sampling and conditioning

5.1 Sampling

The minimum number of samples shall be that specified in ISO 20344:2021 + ISO 20344:2021/Amd- 1:2024, Clause 4, together with the minimum number of test pieces taken from each sample, as given in ~~Table 1~~,Table 1, unless otherwise stated within this standard.