INTERNATIONAL STANDARD

ISO 16073-6

First edition
2021-01

Wildland firefighting personal protective equipment — Requirements and test methods —

Part 6: Footwear

Équipement de protection individuelle pour la lutte contre les feux d'espaces naturels — Exigences et méthodes d'essai —

Partie 6: Chaussures

Reference number
ISO 16073-6:2021(E)

© ISO 2021



COPYRIGHT PROTECTED DOCUMENT

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

Published in Switzerland

Contents

Page

Foreword ..... **v**
Introduction ..... **vi**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Footwear designs **2**
5 Sampling and conditioning **2**
5.1 Sampling 2
5.2 Conditioning 3
6 General **4**
6.1 Footwear conforming to the requirements specified in Table 2 4
6.2 Water resistance 6
6.3 Thermal behaviour 6
6.3.1 Insulation against heat 6
6.3.2 Radiant heat 7
6.3.3 Flame resistance 7
6.4 Laces 7
6.5 Threads 7
6.6 Innocuousness 7
7 Test methods **7**
7.1 Radiant heat test 7
7.2 Flame resistance test 8
7.2.1 Conditioning and sampling 8
7.2.2 Procedure 8
7.3 Thread and lace heat resistance test 9
7.3.1 Principle 9
7.3.2 Apparatus 9
7.3.3 Specimen 9
7.3.4 Procedure 9
7.3.5 Report 9
7.4 Whole footwear heat resistance test 9
7.4.1 Principle 10
7.4.2 Apparatus 10
7.4.3 Specimens 10
7.4.4 Procedure 10
7.4.5 Report 10
7.5 Thread strength test 10
7.6 Eyelet and stud post attachment 11
7.6.1 Principle 11
7.6.2 Apparatus 11
7.6.3 Preparation of test specimens 11
7.6.4 Procedure 11
8 Marking **12**
9 Information to be supplied **13**
9.1 General 13
9.2 Antistatic footwear 13
9.3 Electrically insulating footwear 14
9.4 Insocks 14
9.5 Information regarding penetration resistant insert 15
9.6 Assessment of the footwear by the wearer 15

© ISO 2021 – All rights reserved

Annex A (informative) **Assessment of the footwear by the laboratory during testing for resistance to heat and flame** **16**

Annex B (informative) **Assessment of the footwear by the wearer** **18**

Annex C (informative) **The following drawing can be provided with the user information to assist in assessing the performance of firefighter footwear** **19**

Annex D (informative) **Slip resistance** **20**

Bibliography **23**

 © ISO 2021 – All rights reserved

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 (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 equipment*, Subcommittee SC 14, *Firefighters' personal equipment.*

This first edition of ISO 16073-6, together with ISO 16073-1 to ISO 16073-8, cancels and replaces ISO 16073:2011.

The main changes are as follows:

— the content has been reviewed and separated into several parts;

— the respiratory protection has been deleted from the document.

A list of all parts in the ISO 16073 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.

© ISO 2021 – All rights reserved

Introduction

Wildland firefighting involves work carried out mostly in summer temperatures and for many hours, during which the firefighter can develop high levels of metabolic heat. As a consequence, the personal protective equipment (PPE) is required to be light, flexible and commensurate with the risks to which the firefighter can be exposed in order to be effective without introducing excessive heat stress to the wearer.

It is important to train firefighters in the selection, use, care and maintenance of the PPE covered by this document, including an understanding of its limitations.

It is intended that a risk assessment be undertaken to determine if the PPE covered by this document is suitable for its intended use and the expected exposure.

This document provides minimum performance requirements for wildland firefighters' personal protective equipment footwear designed for use for extended periods during wildland firefighting.

© ISO 2021 – All rights reserved

Wildland firefighting personal protective equipment — Requirements and test methods —

Part 6: Footwear

1 Scope

This document covers the general design, minimum performance requirements and methods of test for wildland firefighting footwear. This document does not cover PPE for structural firefighting (see ISO 11999 series), for use against chemical, biological, radiological and nuclear hazards, ISO 18639 series PPE for firefighters undertaking specific rescue activities or for use where a reflective outer surface is required (see ISO 15538).

Activities in support of wildland firefighting, such as the cutting of trees and the use of a chainsaw can require additional protection to that provided in this document. Users are directed to those relevant standards for the requirements associated with such protection.

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

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

ISO 20344:2011, *Personal protective equipment — Test methods for footwear*

ISO 20345:2011, *Personal protective equipment — Safety footwear*

EN 14119, *Safety of machinery. Interlocking devices associated with guards. Principles for design and selection*

EN 15090:2012, *Footwear for firefighters*

3 Terms and definitions

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

© ISO 2021 – All rights reserved