

TULETÕRJUJATE KIIVRID. KIIVRID METSA- JA
MAASTIKUTULEKAHJU KUSTUTUSTÖÖDEKS

Firefighters helmets - Helmets for wildland fire fighting

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16471:2015 sisaldab Euroopa standardi EN 16471:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 16471:2015 consists of the English text of the European standard EN 16471:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 17.12.2014.	Date of Availability of the European standard is 17.12.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.340.20

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:

Aru 10, 10317 Tallinn, Eesti; koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

ICS 13.340.20

English Version

Firefighters helmets - Helmets for wildland fire fighting

Casques de sapeurs-pompiers - Casques pour la lutte
contre les feux d'espaces naturels

Feuerwehrhelme - Helme für Wald- und
Flächenbrandbekämpfung

This European Standard was approved by CEN on 2 November 2014.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Physical requirements	6
4.1 Materials	6
4.2 Projections	7
4.3 Retention system	7
4.4 Accessories and non-integral additional protective devices	7
5 Performance requirements	8
5.1 Extent of Coverage	8
5.2 Shock absorption.....	8
5.2.1 Crown impact	8
5.2.2 Lateral impacts (front, side, rear)	8
5.3 Penetration resistance	8
5.4 Retention system effectiveness	8
5.5 Retention system strength	8
5.6 Flame resistance.....	8
5.6.1 Helmet shell.....	8
5.6.2 Retention system.....	8
5.6.3 Accessories and no integral additional protective devices	8
5.7 Radiant heat protection / thermal stress	9
5.8 Thermal resistance	9
5.9 Resistance to hot solids	9
5.10 Field of vision.....	9
5.11 Practical performance	10
5.11.1 General.....	10
5.11.2 Requirements	10
6 Test methods.....	10
6.1 Sampling and helmet adjustment	10
6.1.1 Sampling	10
6.1.2 Helmet adjustment.....	10
6.2 Visual inspection	11
6.3 Conditioning.....	11
6.3.1 General.....	11
6.3.2 Cleaning and disinfection	11
6.3.3 Ultraviolet (UV) ageing	11
6.3.4 "Thermal plus" conditioning	11
6.3.5 "Thermal minus" conditioning	11
6.3.6 Wet conditioning.....	11
6.4 Extent of coverage.....	11
6.4.1 Equipment	11
6.4.2 Samples	11
6.4.3 Test method.....	11
6.5 Shock absorption.....	12
6.5.1 General.....	12
6.5.2 Crown impact	12
6.5.3 Lateral impacts (front, side, rear).....	12

6.6	Penetration resistance	12
6.7	Retention system effectiveness	12
6.8	Retention system strength	12
6.9	Flame resistance	13
6.9.1	Helmet shell and items	13
6.9.2	Helmet retention system components	13
6.10	Radiant heat protection/thermal stress	13
6.11	Thermal resistance	13
6.12	Resistance to hot solids	13
6.13	Field of vision	13
6.14	Practical performance testing	13
6.14.1	Test subjects and conditions	13
6.14.2	Procedure	14
6.14.3	Test report	15
6.14.4	Variants	15
7	Marking	15
8	Information to be supplied by the manufacturer	16
Annex A (normative)	Conditioning and testing schedule	18
Annex ZA (informative)	Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC	20

Foreword

This document (EN 16471:2014) has been prepared by Technical Committee CEN/TC 158 “Head protection”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2015 and conflicting national standards shall be withdrawn at the latest by June 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

The purpose of this European Standard is to provide minimum performance requirements for helmets designed for use for extended periods during wildland fire fighting and associated activities.

Wildland fire fighting involves work primarily in summer temperatures, for many hours during which the fire fighter may develop high levels of metabolic heat. Consequently, the protective helmet should be comfortable, light and commensurate with the risks to which the fire fighter may be exposed in order to be effective without introducing heat stress to the wearer.

This European Standard does not cover helmets for use in situations where helmets conforming to EN 443 are more suitable.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the minimum requirements for wildland fire fighting helmets protecting the upper head mainly against the effects of impact, penetration, heat, flame and burning embers while conducting fire fighting and associated activities in wildland environments. Requirements for marking and information to be supplied by the manufacturer are included. Wildland fire fighting involves direct and indirect attack techniques (like wood cutting).

Wildland environments include forests, crops, plantations and grass/heath/scrub or farmland.

Helmets for use while fire fighting in buildings and other structures are not covered by this European Standard (see EN 443). This helmet is not intended to provide protection during fire entrapment.

Protection of the face, eyes, ears and neck may require additional items of personal protective equipment (PPE), which are not covered by this European Standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 168:2001, *Personal eye-protection - Non-optical test methods*

EN 960:2006, *Headforms for use in the testing of protective helmets*

EN 1811, *Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin*

EN 13087-1:2000, *Protective helmets - Test methods - Part 1: Conditions and conditioning*

EN 13087-2, *Protective helmets - Test methods - Part 2: Shock absorption*

EN 13087-3:2000, *Protective helmets - Test methods - Part 3: Resistance to penetration*

EN 13087-4, *Protective helmets - Test methods - Part 4: Retention system effectiveness*

EN 13087-5:2012, *Protective helmets — Test methods — Part 5: Retention system strength*

EN 13087-6, *Protective helmets - Test methods - Part 6: Field of vision*

EN 13087-7:2000, *Protective helmets - Test methods - Part 7: Flame resistance*

EN 13087-10, *Protective helmets - Test methods - Part 10: Resistance to radiant heat*

EN ISO 13688, *Protective clothing - General requirements (ISO 13688)*

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