

Industrial safety helmets

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 397:2012+A1:2013 sisaldb Euroopa standardi EN 397:2012+A1:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 397:2012+A1:2013 consists of the English text of the European standard EN 397:2012+A1:2012.
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 kätesaadavaks 31.10.2012.	Date of Availability of the European standard is 31.10.2012.
Standard on kätesaadav 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 reproduutseerimise 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; 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; www.evs.ee; phone 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 397:2012+A1

October 2012

ICS 13.340.20

Supersedes EN 397:2012

English Version

Industrial safety helmets

Casques de protection pour l'industrie

Industrieschutzhelme

This European Standard was approved by CEN on 17 December 2011 and includes Amendment 1 approved by CEN on 19 July 2012.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

	Page
Foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Physical requirements	7
4.1 Materials and construction	7
4.2 External vertical distance	8
4.3 Internal vertical distance	8
4.4 Internal vertical clearance	8
4.5 Horizontal distance	8
4.6 Wearing height	8
4.7 Harness	8
4.7.1 Headband/napé strap	8
4.7.2 Cradle	9
4.7.3 Comfort band or sweatband	9
4.8 Chin strap	9
4.9 Ventilation	9
4.10 Accessories	9
5 Performance requirements	9
5.1 Mandatory requirements	9
5.1.1 Shock absorption	9
5.1.2 Resistance to penetration	10
5.1.3 Flame resistance	10
5.1.4 Chin strap anchorages	10
5.1.5 Label	10
5.2 Optional requirements	10
5.2.1 Very low temperature (- 20 °C or - 30 °C)	10
5.2.2 Very high temperature (+ 150 °C)	10
5.2.3 Electrical properties	10
5.2.4 Lateral deformation	11
5.2.5 Molten metal splash	11
6 Test requirements	11
6.1 Samples	11
6.2 Conditioning for testing	12
6.2.1 Temperature conditioning cabinet	12
6.2.2 Pre-conditioning	12
6.2.3 Low temperature	12
6.2.4 High temperature	12
6.2.5 Water immersion	12
6.2.6 Artificial ageing	12
6.2.7 Very low temperature	13
6.2.8 Very high temperature	13
6.3 Testing atmosphere	13
6.4 Headforms	14
6.4.1 Construction	14
6.4.2 Selection of size	14
6.5 Measurement of clearance, distances and wearing height	14
6.6 Shock absorption	14
6.6.1 Principle	14

6.6.2	Apparatus	14
6.6.3	Test procedure	16
6.7	Resistance to penetration	16
6.7.1	Principle	16
6.7.2	Apparatus	16
6.7.3	Test procedure	17
6.8	Resistance to flame	17
6.8.1	Principle	17
6.8.2	Apparatus	17
6.8.3	Test procedure	17
6.9	Chin strap anchorage	18
6.9.1	Principle	18
6.9.2	Apparatus	18
6.9.3	Procedure	18
6.10	Electrical properties	18
6.10.1	Test 1	18
6.10.2	Test 2	19
6.10.3	Test 3	19
6.11	Lateral deformation	20
6.11.1	Principle	20
6.11.2	Procedure	20
6.12	Molten metal splash	20
6.12.1	Principle	20
6.12.2	Apparatus	20
6.12.3	Procedure	20
7	Marking	21
7.1	Markings on the helmet	21
7.2	Additional information	21
Annex A (informative) Recommendations for the materials and construction of industrial safety helmets		23
Annex B (informative) Alternative procedure for artificial ageing		25
Annex C (normative) Test results — Uncertainty of measurement		26
Annex D (informative) Significant technical changes between this European Standard and EN 397:1995		27
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC Personal Protective Equipment		28
Bibliography		29

Foreword

This document (EN 397:2012+A1:2012) 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 April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

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 includes Amendment 1 approved by CEN on 19 July 2012.

This document supersedes ~~EN 397:2012~~.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ~~A₁~~ A₁.

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.

Annex D provides details of significant technical changes between this European Standard and the previous edition.

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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 physical and performance requirements, methods of test and marking requirements for industrial safety helmets. The mandatory requirements apply to helmets for general use in industry. Additional optional performance requirements are included to apply only where specifically claimed by the helmet manufacturer. Industrial safety helmets are intended primarily to provide protection to the wearer against falling objects and consequential brain injury and skull fracture.

2 Normative references

A1 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. **A1**

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

EN ISO 472, *Plastics — Vocabulary (ISO 472:1999)*

EN ISO 9185:2007, *Protective clothing — Assessment of resistance of materials to molten metal splash (ISO 9185:2007)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

industrial safety helmet

headgear, hereinafter referred to as a "helmet", primarily intended to protect the upper part of a wearer's head against injury from falling objects

3.2

shell

hard, smoothly finished material that provides the general outer form of the helmet

3.3

peak

extension of the shell above the eyes

3.4

brim

rim surrounding the shell

NOTE A brim may include a rain gutter.

3.5

harness

complete assembly that provides a means:

- of maintaining the helmet in position on the head; and/or
- of absorbing kinetic energy during an impact

NOTE A harness includes a headband and nape strap and may also include the items defined in 3.5.3 to 3.5.6.