

**Suure vastupidavusega tööstuslikud kiivrid**

**High performance industrial helmets**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 14052:2012 sisaldab Euroopa standardi EN 14052:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 14052:2012 consists of the English text of the European standard EN 14052:2012.
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 kättesaadavaks 08.02.2012.	Date of Availability of the European standard is 08.02.2012.
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](mailto: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; [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto: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](http://www.evs.ee); phone 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## High performance industrial helmets

Casques de protection à haute performance pour l'industrie

Hochleistungs-Industrieschutzhelme

This European Standard was approved by CEN on 17 December 2011.

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, 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
Introduction .....	5
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Physical requirements .....	7
4.1 General.....	7
4.2 Materials and construction .....	7
4.2.2 Visual inspection .....	8
4.3 Chin strap .....	8
5 Performance requirements .....	8
5.1 General.....	8
5.2 Mandatory requirements .....	9
5.2.1 Shock absorption.....	9
5.2.2 Resistance to penetration .....	9
5.2.3 Retention system release .....	9
5.2.4 Retention system effectiveness .....	9
5.2.5 Flame resistance .....	9
5.2.6 Label.....	9
5.3 Optional requirements .....	9
5.3.1 Performance at lower temperatures .....	9
5.3.2 Performance at higher temperature .....	9
5.3.3 Resistance to radiant heat .....	10
5.3.4 Electrical properties .....	10
5.3.5 Molten metal splash .....	10
6 Testing .....	11
6.1 Samples .....	11
6.2 Conditions and conditioning for testing .....	12
6.2.1 General.....	12
6.2.2 Low temperature .....	12
6.2.3 High temperature .....	12
6.2.4 Water immersion .....	12
6.2.5 Artificial ageing .....	12
6.2.6 Lower temperature.....	12
6.2.7 Higher temperature.....	12
6.2.8 Radiant heat .....	14
6.3 Headforms .....	14
6.3.1 Construction.....	14
6.3.2 Selection of size.....	14
6.4 Shock absorption.....	15
6.5 Resistance to penetration .....	16
6.6 Retention system release .....	16
6.7 Retention system effectiveness .....	16
6.8 Resistance to flame .....	17
6.9 Resistance to radiant heat .....	17
6.10 Electrical properties .....	17
6.11 Molten metal splash .....	17
6.11.1 Principle.....	17

<b>6.11.2 Apparatus</b> .....	<b>17</b>
<b>6.11.3 Procedure</b> .....	<b>17</b>
<b>7 Marking and information to be supplied by the manufacturer</b> .....	<b>18</b>
<b>7.1 Markings on the helmet</b> .....	<b>18</b>
<b>7.2 Additional information supplied by the manufacturer</b> .....	<b>18</b>
<b>7.2.1 Information to be supplied on a label</b> .....	<b>18</b>
<b>7.2.2 Additional information</b> .....	<b>19</b>
<b>Annex A (informative) Comfort</b> .....	<b>20</b>
<b>Annex B (informative) Test results, uncertainty of measurement</b> .....	<b>21</b>
<b>B.1 Uncertainty of measurement</b> .....	<b>21</b>
<b>B.2 Interpretation of results</b> .....	<b>21</b>
<b>B.3 Calculation of uncertainty of measurement</b> .....	<b>22</b>
<b>Annex C (informative) Significant technical changes between this European Standard and EN 14052:2005</b> .....	<b>23</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC Personal Protective Equipment</b> .....	<b>24</b>
<b>Bibliography</b> .....	<b>26</b>

## Foreword

This document (EN 14052:2012) 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 August 2012, and conflicting national standards shall be withdrawn at the latest by August 2012.

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 supersedes EN 14052:2005.

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

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, 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.

## Introduction

Advances in materials and design methods have allowed helmets to be developed that have a higher performance than other types of general industrial helmets.

Helmets complying with European Standards offer a suite of head protection devices for general industrial use:

- the industrial bump cap meeting the requirements of EN 812,
- the industrial safety helmet meeting the requirements of EN 397, and
- the high performance industrial helmet meeting the requirements of EN 14052.

Industrial bump caps are intended to provide protection to the wearer against the effects of striking his head against hard, stationary objects with sufficient severity to cause lacerations or other superficial injuries. They are not intended to provide protection against the effects of falling or thrown objects, or moving or suspended loads. In addition to the mandatory requirements the caps may have shock absorption properties at low temperatures, be flame resistant and have electrical properties.

Industrial safety helmets are intended primarily to provide protection to the wearer against falling objects and are not intended to provide protection against off crown impacts. The mandatory requirements for the helmets includes for them to have flame resistant properties. In addition to the mandatory requirements the helmets may have shock absorption properties at very low temperatures and very high temperatures, have electrical insulation properties, have lateral deformation properties, and provide protection against molten metal splash.

The high performance industrial helmet offers greater protection from falling objects, protection from off crown impacts and protection from penetration by a flat blade striker. It also includes a retention system that meets mandatory requirements for system release and system effectiveness properties. The helmet has the same flame resistant properties as the industrial safety helmet and offers the same optional protection against other risks with the exception of lateral deformation.

The technical committee, which has prepared this European Standard, realizes that mechanical rigidity is of importance for the wearer's safety. At the time, the standard was prepared no valid test method was recognized. For that reason, no requirements concerning mechanical rigidity have been introduced.

Designers are encouraged to accommodate ear, eye, and respiratory protection into the helmet design where required. When possible the design and performance of such additional protective functions should be in accordance with the relevant European Standard for these products. When this is not possible, the manufacturer will draw attention to any compromises by means of information supplied with the helmet.

The wearing of a helmet meeting the requirements of this European Standard will reduce, but not eliminate, the likelihood of head injury. There are limits to the amount of protection that can be provided. In the workplace, it remains the responsibility of the employer to judge the helmet's suitability for their particular purpose.

## 1 Scope

This European Standard specifies physical, performance, test and marking requirements for high performance industrial helmets.

High performance industrial helmets, as specified in this European Standard, are intended to provide to the wearer protection against falling objects and off crown impacts and the consequential brain injury, skull fracture and neck injury.

This European Standard includes mandatory requirements that apply to all high performance industrial helmets and additional, optional, performance requirements that apply only where specifically claimed by the helmet manufacturer.

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

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

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

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

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

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

EN 13087-8, *Protective helmets — Test methods — Part 8: Electrical properties*

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

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

#### **high performance industrial helmet**

head protector, hereinafter referred to as 'helmet', primarily intended to provide the wearer with protection against falling objects and of crown impacts

Note 1 to entry: The helmet may incorporate additional protective functions.