

RATSUTAMISKIIVRID

Helmets for equestrian activities

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 1384:2023 sisaldab Euroopa standardi EN 1384:2023 ingliskeelset teksti.	This Estonian standard EVS-EN 1384:2023 consists of the English text of the European standard EN 1384:2023.
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 and Accreditation.
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English Version

## Helmets for equestrian activities

Casques de protection pour activités équestres

Schutzhelme für reiterliche Aktivitäten

This European Standard was approved by CEN on 21 February 2023.

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

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## European foreword

This document (EN 1384:2023) has been prepared by Technical Committee CEN/TC 158 “Head protection”, the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by October 2023, and conflicting national standards shall be withdrawn at the latest by October 2023.

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

This document supersedes EN 1384:2017.

In comparison with the previous edition, the following technical modifications have been made:

- in Clause 2, EN ISO 13688:2013 has been added referenced in 4.3 Materials innocuousness;
- in Clause 4.1, clarifications have been added;
- new Clause 4.2 Ergonomics and Clause 5.1.6 Ergonomics assessment have been added;
- in Clause 4.6, a hazard anvil impact test has been added;
- in Clause 4.7, three impacts in test method described in 5.8 has been added;
- in Clause 4.9.2, reworded to “the maximum displacement of the headform”;
- from Clause 5 *Testing*, requirements were moved to 4.3 *Materials innocuousness* and a new Clause 5.13 *Test of materials innocuousness* have been added;
- in Clause 5.7.1, Figure 3 – *Definition Hazard Anvil* has been added;
- in Clause 5.7.3, speed for hazard anvil has been added;
- in Clause 5.7.4, rewritten clause and added impact sites for hazard anvil;
- in Clause 5.7.5, as a result of the additional impact the test period has been extended to 360 seconds;
- in Clause 5.8.4, increased impact energy changed to  $18,4 \text{ J} \pm 0,5 \text{ J}$  and theoretical drop height changed to 625 mm;
- in Clause 5.8.5, changed to “three” impact sites on each helmet;
- in Clause 5.9.3, force set changed to  $800 \text{ N} \pm 20 \text{ N}$ ;
- in Clause 6.2 new requirements and clarification to text;
- Table ZA.1 has been updated with corresponding clauses to Regulation (EU) 2016/425.

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

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

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## Introduction

This document specifies the requirements for protective headwear for use in equestrian activities that can result in a broad spectrum of accident situations.

Equestrian activities where helmets are used include a number of different disciplines such as rider, handler and/or carer, carried out indoors and outdoors and under varying climate conditions.

This document includes tests for shock absorption, penetration, lateral crush. There are different statistical accident studies from racing sports, competition, and leisure riding activities. The most common accident situation resulting in head injuries are fall accidents from the horse. There are also accidents where the rider is injured during handling where the horse interacts with the rider.

This document covers today linear impacts to the head in the shock absorption test. The reason for not implementing a rotational test method is that no test method is specified at the time of writing this document. CEN/TC 158/WG 11 will in the near future present a new test method, which can be used in future revisions of EN 1384.

Also, this document tests the helmets effectiveness for a horseshoe impact in the shock absorption against the hazard anvil and sharp objects in the penetration test. The mechanical strength is tested by measuring the lateral deformation. This test will only evaluate that the helmet has a minimum lateral deformation that will protect the skull from fracture. A helmet that passes the mechanical strength test will not per definition protect the wearer from a horse falling directly onto the helmet.

Wearers need to be made aware that the protection given by a helmet depends on the circumstances of the accident and wearing of a helmet cannot always prevent injury, death or disability.

A proportion of the energy of an impact is absorbed by the helmet, thereby reducing the force of the blow sustained by the head. The structure of the helmet can be damaged in absorbing this energy and any helmet that sustains a severe blow should be replaced even if damage is not apparent.

Performance levels and test methods are based upon proven methods of test and technical criteria and enhanced by data from expert sources in the field of head protection.

## 1 Scope

This document specifies requirements for protective helmets that can have a peak, for people involved in all equestrian activities including but not limited to riding, driving, or handling and caring for horses.

It gives safety requirements that include methods of test and levels. Requirements and the corresponding methods of test are given for the following:

- a) construction, including field of vision;
- b) shock absorbing properties;
- c) resistance to penetration;
- d) mechanical strength in lateral deformation;
- e) retention system properties;
- f) deflection of peak (if fitted);
- g) marking and information;
- h) use of headforms in accordance with EN 960:2006.

## 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.

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

EN 1811:2023, *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<sup>1</sup>, *Protective helmets — Test methods — Part 1: Conditions and conditioning*

EN 13087-2:2012<sup>2</sup>, *Protective helmets — Test methods — Part 2: Shock absorption*

EN 13087-3:2000<sup>3</sup>, *Protective helmets — Test methods — Part 3: Resistance to penetration*

EN 13087-4:2012, *Protective helmets — Test methods — Part 4: Retention system effectiveness*

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

EN 13087-6:2012, *Protective helmets — Test methods — Part 6: Field of vision*

<sup>1</sup> As amended by EN 13087-1:2000/A1:2001.

<sup>2</sup> As amended by EN 13087-2:2000/A1:2001.

<sup>3</sup> As amended by EN 13087-3:2000/A1:2001



EN ISO 7500-1:2018, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system (ISO 7500-1:2018)*

EN ISO 13688:2013<sup>4</sup>, *Protective clothing — General requirements (ISO 13688:2013)*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions 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/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

#### 3.1

##### **shell**

material that provides the hard outer case of the helmet

#### 3.2

##### **protective padding**

padding material liner provided to absorb impact energy

#### 3.3

##### **comfort padding**

padding solutions provided for sizing and comfortable fit

#### 3.4

##### **retention system**

complete assembly by means of which the helmet is maintained in position on the head, including any devices for adjustment of the system or to enhance the wearer's comfort

#### 3.5

##### **draw-lace**

lace used by a wearer for making adjustments to the fit of the cradle on the head

#### 3.6

##### **chin strap**

part of the *retention system* (3.4) consisting of a strap that passes under the wearer's jaw to keep the helmet in position

#### 3.7

##### **chin cup**

cup mounted on the *retention system* (3.4) to locate the strap on the point of the wearer's chin

#### 3.8

##### **helmet type**

category of helmets which do not differ in such essential respects as the material, construction of the helmet, *retention system* (3.4) or *protective padding* (3.2)

Note 1 to entry: Difference in sizes in itself does not constitute different helmet types.

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<sup>4</sup> As amended by EN ISO 13688:2013/A1:2021.