SLOVENSKI STANDARD
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Čelade za konjeniške aktivnosti

Helmets for equestrian activities

Schutzhelme für reiterliche Aktivitäten

Casques de protection pour sports hippiques

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Helmets for equestrian activities

Casques de protection pour sports hippiques

Schutzhelme für reiterliche Aktivitäten

This European Standard was approved by CEN on 13 February 2017.

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European foreword

This document (EN 1384:2017) 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of an identical text or by endorsement, at the latest by December 2017, and conflicting national standards shall be withdrawn at the latest by December 2017.

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 1384:2012.

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 A provides details of significant technical changes between this European Standard and the previous edition, EN 1384:2012.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This standard specifies the requirements for protective headwear for use in equestrian activities. The 2012 version of EN 1384 has been revised based on a mandate from CEN.

The intention of a helmet is to reduce the risk of injury to the skull and part of the head surrounded by 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 death or long term 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 may 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.

Specific issues that have been addressed to give improved protection to the user are:

a) shock absorption including a higher drop height;

b) field of vision;

c) lateral deformation;

d) materials;

e) area of protection;

f) additional construction requirements.

1 Scope

This European Standard specifies requirement for protective helmets that can have a peak, for people involved in equestrian activities.

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

— construction, including field of vision;

— shock absorbing properties;

— resistance to penetration;

— lateral deformation ;

— retention system properties

— deflection of peak (if fitted);

— marking and information;

— use of headforms in accordance with EN 960:2006.

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 1811, *Reference test method for release of nickel from the 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 13087-2:2012, *Protective helmets - Test methods - Part 2: Shock absorption*

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

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

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

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

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

3 Terms and definitions

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

3.1
shell
material that provides the hard outer case of the helmet

3.2
protective padding (liner)
padding material provided to absorb impact energy

3.3
comfort padding or size padding
padding material provided to ensure comfortable and correct fit

3.4
cradle
headband or other head fitting and those internal parts of the helmet other than the padding, which are in contact with the head

3.5
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

3.6
draw-lace
lace used by a wearer for making adjustments to the fit of the cradle on the head

3.7
chin strap
part of the retention system consisting of a strap that passes under the wearer's jaw to keep the helmet in position

3.8
chin cup
cup mounted on the retention system to locate the strap on the point of the wearer's chin

3.9
helmet type
category of helmets which do not differ in such essential respects as the material, construction of the helmet, retention system or protective padding

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

3.10
peak
extension from the basic form of the helmet above the eyes

Note 1 to entry: Depending upon the construction of the helmet, such extension may be considered to be, or not to be, a peak with respect to 5.12 Peak deflection .It may be integral with, or detachable by the wearer from the helmet

3.11
area of protection
minimum area of the headform covered by the protective padding (liner)

3.12
test area
area of helmet which is subject to shock absorption and penetration tests

3.13
retention fixing point
part of the helmet to which the retention system is permanently attached

4 Requirements

4.1 General

Helmets for equestrian activities can be worn for short and long periods of time (for many hours) in cold and hot climates including activities that result in the user's body temperature increasing. Consequently the helmet should be designed to be comfortable, light and commensurate with the risks to which the user may be exposed in order to be effective without introducing heat stress to the wearer.

The following requirements shall be visually assessed in accordance with 5.1.

The helmet may be constructed either with or without a shell, and with or without means of ventilation. Vents may increase comfort but they allow for the possibility of solid objects entering through a vent and contacting the head. Within the area of protection ventilation and other apertures are permitted but these are restricted to the area above the test line.

If a shell is used, then protective padding shall be securely fastened to it.

If there are draw-laces / adjusting system for the wearing height, all of the requirements of this standard shall be satisfied

4.2 Materials

For those parts of the helmet coming, or that may come, into contact with the skin the material used shall not be subject to any known appreciable alteration from contact with sweat or with substances likely to be used on the wearer.

Materials shall not be used which are known to cause skin disorders or other adverse effects on health. The requirements shall be assessed in accordance with 5.1.3.

4.3 Finish and projections

There shall be no sharp edges, roughness or projection on any parts of the helmet which are in contact, or potential contact, with the wearer, when the helmet is worn, such as is likely to cause injury to the wearer.

Except for a button on the top of the helmet and a peak, any external projection shall not exceed 5 mm or shall be smoothly faired to the adjacent surface.

All edges shall be smooth and rounded. There shall be no rigid projections on the inside of the helmet exceeding 2mm. After being tested the helmet shall not exhibit damage that could cause significant injury to the wearer when the helmet is worn (sharp edges, points).Test according to 5.1

4.4 Extent of protection

The coverage shall extend down to and include both the area above the AA' plane and the area above the RF1R'F2 line, point R' is at the level of the reference plane (see Figure 2).

4.5 Shock absorption

When tested in accordance with the method in 5.7, for each impact

— the maximum acceleration shall not exceed 250 *g* at any time;

— the total time during which the curve (acceleration / function of time) exceeds 150g shall not be greater than 5 ms;

— the retention system shall remain fastened and the helmet shall remain on the headform.

4.6 Penetration

When tested by the method described in 5.8, four impacts on the same helmet, there shall be no contact between the striker and test block.

4.7 Mechanical strength

When tested in accordance with 5.9 the maximum lateral deformation of the helmet shall not exceed 30 mm, and the residual lateral deformation shall not exceed 10 mm.

4.8 Retention system

4.8.1 General

The following requirements shall be visually and manually assessed in accordance with 5.1.4. A retention system shall be permanently fixed to the helmet and shall incorporate a chin strap not less than 15 mm wide. The system shall be permanently fitted with fastening and adjustment devices which may be combined. The chinstrap shall be adjustable in length. The retention system shall be freed by deliberate action only. The chin strap shall not have a chin cup.

The colour of any part of the retention system shall not be green.

It is recommended that the part of the device intended to be operated by the wearer to cause the device to open is coloured orange or red.

NOTE It is permissible for the system to include padding or other means of enhancing comfort to the wearer.

4.8.2 Retention system strength

When tested in accordance with 5.10, the dynamic extension of the retention system, including slippage of the buckle, shall not exceed 35 mm and the residual extension shall not exceed 25 mm. Following the test, manual release of the unloaded buckle shall be possible.

4.8.3 Retention system effectiveness

When the helmet is fitted to an appropriate size headform with the retention system adjusted, in accordance with the manufacturer's instruction and is subjected to the test described in 5.11, the helmet shall remain on the headform. Rotation of the helmet is acceptable during testing.

4.9 Peak

4.9.1 Peak deflection

Where the helmet has a peak, when the peak is tested by the method described in 5.12, the deflection at the lateral mid-point (midpoint from the sides and not midpoint of the peak itself) of the front edge of the peak shall be greater than 6, 0 mm.