



TS EN 1384

Aralık 2017

ICS 13.340.20

Atçılık faaliyetleri için kasklar

Helmets for equestrian activities

Casques de protection pour sports hippiques

Schutzhelme für reiterliche Aktivitäten



TELİF HAKKI KORUMALI DOKÜMAN

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EUROPEAN STANDARD

EN 1384

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2017

ICS 13.340.20

Supersedes EN 1384:2012

English Version

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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Ref. No. EN 1384:2017 E

Contents	Page
European foreword.....	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	7
4 Requirements	8
4.1 General.....	8
4.2 Materials.....	8
4.3 Finish and projections.....	8
4.4 Extent of protection.....	8
4.5 Shock absorption.....	9
4.6 Penetration.....	9
4.7 Mechanical strength.....	9
4.8 Retention system.....	9
4.8.1 General.....	9
4.8.2 Retention system strength.....	9
4.8.3 Retention system effectiveness.....	9
4.9 Peak.....	9
4.9.1 Peak deflection.....	9
4.9.2 Peak dimensions	10
4.10 Field of vision.....	11
5 Testing.....	12
5.1 Visual inspection	12
5.1.1 General.....	12
5.1.2 Marking and information supplied.....	12
5.1.3 Materials innocuousness.....	12
5.1.4 Retention system and chin strap.....	13
5.1.5 Finish and projections.....	13
5.1.6 Ventilation features.....	13
5.2 Assessment of extent of the area of protection and marking of test area	13
5.3 Headforms	14
5.4 Field of vision.....	14
5.5 Test sequence and number of samples	14
5.6 Testing atmosphere and conditioning	15
5.6.1 General.....	15
5.6.2 High temperature conditioning.....	15
5.6.3 Low temperature conditioning	15
5.6.4 Artificial ageing and moisture conditioning	16
5.7 Shock absorption.....	16
5.7.1 General.....	16
5.7.2 Headform	16
5.7.3 Impact speed.....	16
5.7.4 Test sites.....	16
5.7.5 Test period.....	16
5.8 Resistance to penetration	16

5.8.1	General	16
5.8.2	Striker	16
5.8.3	Test block	16
5.8.4	Impact energy	17
5.8.5	Test sites	17
5.9	Mechanical strength	17
5.9.1	General	17
5.9.2	Apparatus	17
5.9.3	Procedure	17
5.10	Retention system strength	17
5.10.1	General	17
5.10.2	Headforms	17
5.10.3	Drop height	18
5.11	Retention system effectiveness	18
5.11.1	General	18
5.11.2	Headforms	18
5.11.3	Direction of force application	18
5.11.4	Drop height	18
5.11.5	Report	18
5.12	Peak deflection	18
5.12.1	Principle	18
5.12.2	Apparatus	18
5.12.3	Test procedure	18
6	Marking and labelling	19
6.1	Marking	19
6.2	Information and instruction for the user	20
Annex A (informative) Significant technical changes between this European Standard and EN 1384:2012		21
Annex ZA Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC Personal Protective Equipment		22
Bibliography		23

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.

4.9.2 Peak dimensions

In the case of helmets whose construction incorporates a shell fitted with protective padding, the extension is considered to be a peak if it is not made from the same material as the protective padding (that is, it is made from the same material of the shell).

When compared as follows, extensions less than twice the average thickness of the helmet are not considered to be peaks, i.e. if $E \leq 2T$, the extension is not considered to be a peak.

E = horizontal projection of the extension, measured relative to the front of the headform at its lower front edge where it crosses the vertical longitudinal plane.

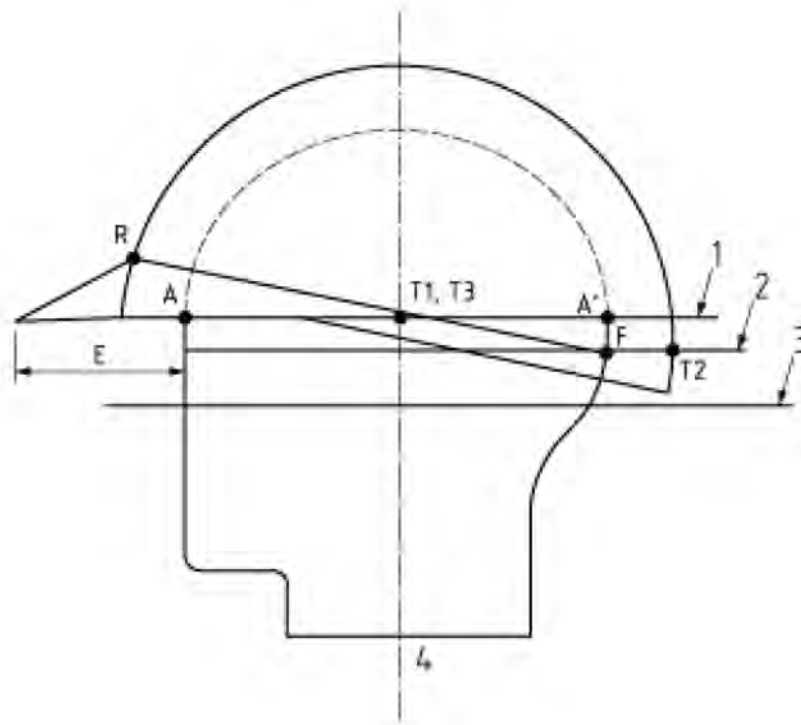
T = average thickness of the helmet calculated as $(T1+T2+T3)/3$.

T1 = test line thickness of the helmet at the left side (left side of the helmet where it crosses the vertical transverse plane of the headform).

T2 = test line thickness of the helmet at the rear (rear of the helmet where it crosses the vertical longitudinal plane of the headform).

T3 = test line thickness of the helmet at the right side (right side of the helmet where it crosses the vertical transverse plane of the headform).

Test line thickness to be measured perpendicular to the outside surface of the helmet.



Key

- 1 AA' plane
- 2 reference plane
- 3 basic plane
- 4 central vertical axis

Figure 1 — Peak extension measurement

4.10 Field of vision

When tested in accordance with 5.4, there shall be no occultation in the field of vision bounded by angles as follows:

- upwards 0°
- horizontally 105°
- downwards 45°

5 Testing

5.1 Visual inspection

5.1.1 General

Helmets shall provide users with a level of comfort consistent with the level of protection required against the hazard which is present, the ambient conditions, the level of the user's activity, and the anticipated duration of use of the helmet.

Check by visual and tactile examination that helmets have no rough, sharp or hard surfaces that could irritate or injure the user.

5.1.2 Marking and information supplied

An assessment of the helmet's marking and information supplied by the manufacturer shall be performed.

The durability of the markings as specified in 6.1 shall be verified by inspection after rubbing the marking by hand for 15 s with a piece of cotton cloth soaked with water. The inspection shall be carried out by a person with normal vision to determine if the marking remains legible. Record if the information required in Clause 6 is present.

5.1.3 Materials innocuousness

An inspection shall consist of an assessment of any safety data sheets or declarations relevant to the materials used in the helmet's construction, for the parts coming or that may come into contact with the skin.

Particular attention needs to be paid to the presence of plasticisers, unreacted components, heavy metals, impurities and the chemical identity of pigments and dyes. [EN ISO 13688:2013, 4.2 Innocuousness].

All metallic materials which could come into prolonged contact with the skin (e.g. studs, fittings) shall have a release of Nickel of less than 0,5 µg/cm³ per week when tested according to EN 1811.

This testing may entail a certain amount of dismantling in accordance with the manufacturer's instructions for maintenance. If this occurs the helmet shall not be used for further testing.

Examples of documents, which can be presented as evidence of chemical innocuousness, are given below:

- a) materials specifications;
- b) safety data sheets relating to the materials;
- c) information relating to the suitability of the materials for use with food, in medical devices, or other relevant applications;
- d) information relating to toxicological, allergenic, carcinogenic, toxic to reproduction or mutagenic investigations on the materials;
- e) information relating to eco-toxicological and other environmental investigations on the materials.

Record if the requirements in 4.2 are fulfilled.

5.1.4 Retention system and chin strap

Check visually and manually that all parts of the retention system are permanently fixed to the helmet. The width of the chin strap shall be measured prior to testing and without any tension, Check visually that there is no chin cup on the strap.

Record the results.

5.1.5 Finish and projections

Inspection shall be performed by visual and tactile examination, and by measurement.

Record the results.

5.1.6 Ventilation features

Check that there are no ventilation and other apertures in the area of protection below the test line.

Record the results.

5.2 Assessment of extent of the area of protection and marking of test area

Completely slacken the retention system.

Place the helmet on a headform of appropriate size, and apply a vertical load of 50 N in order to stabilize the helmet on the headform. Position the helmet so that the front lower edge (the lowest lateral mid-point at the front of the protective padding (liner)) is no lower than the mid-point between the reference plane and the AA' plane. If the manufacturer declares another position, it shall not be above the AA' plane.

Assessment of the extent of the area of protection shall be done in the opening and closed position where there are draw-laces or height adjusting system if fitted.

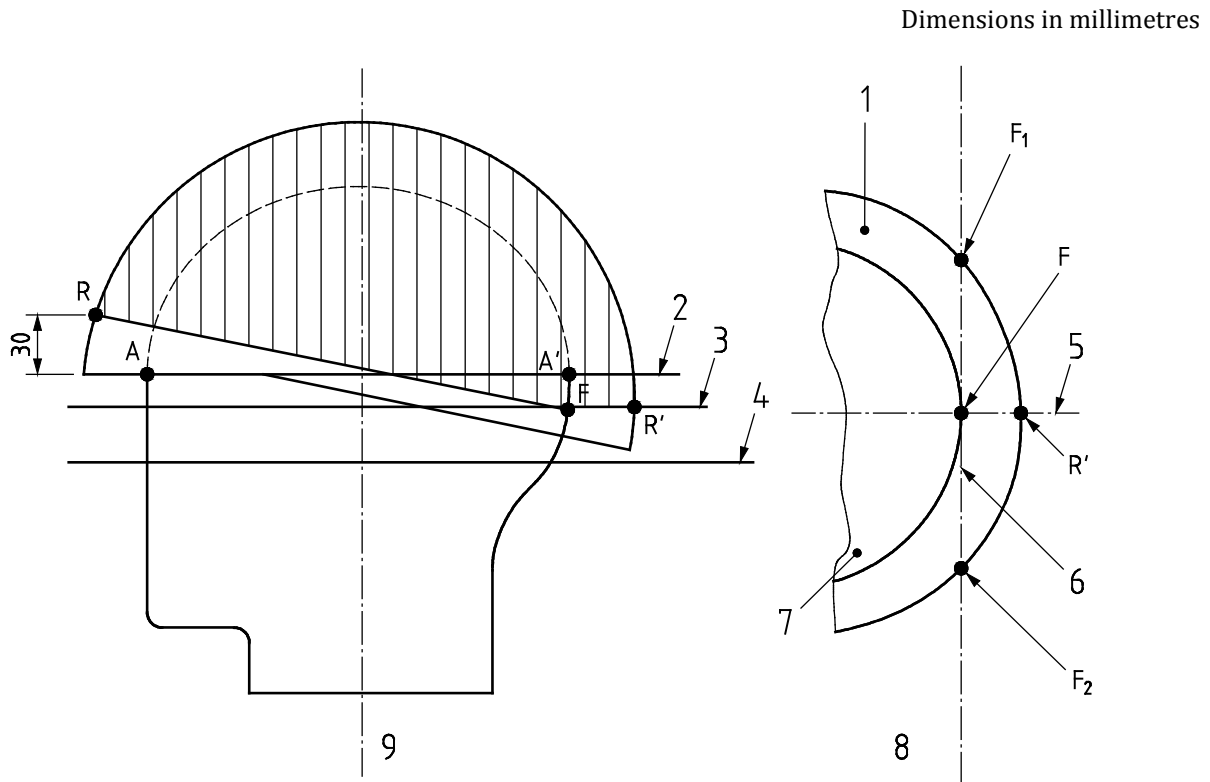
The helmet is marked up as follows:

- a) a horizontal line at the level of the AA' plane of the headform;
- b) points F_1 and F_2 which are the sideways horizontal projection of the headform point F on to the outer surface of the helmet;
- c) a front point R on the projected longitudinal vertical plane of the headform and 30 mm above the AA' plane;
- d) draw a line around the helmet joining points R, F_1 , R', F_2 .

The area of test extends down to the $RF_1R'F_2$ line and the area of coverage shall extend down to and include both the area above the AA' plane as marked in a) and the area above the $RF_1R'F_2$ line as marked in d). Join F_1 and F_2 on the reference plane.

An example of a typical helmet is shown in Figure 2.

NOTE Rear test line between F_1 and F_2 is horizontal.



Key

- | | |
|-------------------------------|--|
| 1 helmet | 6 line of sideways horizontal projection of headform point F |
| 2 AA' plane | 7 headform |
| 3 reference plane | 8 section on the reference plane |
| 4 basic plane | 9 central vertical axis |
| 5 longitudinal vertical plane | |

NOTE Longitudinal vertical plane – equivalent to EN 960:2006, 2.8 “vertical longitudinal plane”.

Test headform showing test area (area above line RF₁ R' F₂) and area of protection (both the area above the AA' plane and the area above the RF₁ R' F₂ line)

Figure 2 — Test headform showing test area and area of protection

5.3 Headforms

The headforms complying with EN 960:2006 shall be used for testing, except for shock absorption, where only 5 sizes are available See 5.7.2 for headforms used to test shock absorption.

5.4 Field of vision

Completely slacken the draw laces if fitted.

Testing shall be in accordance with EN 13087-6. .

5.5 Test sequence and number of samples

Only new and complete helmets as offered for sale shall be tested. If the helmet is supplied with a removable cover (such as hat silks) then the tests shall be carried out with this cover removed. The duration between the date of manufacture and the date of testing shall be not less than 6 days.

Four samples of helmets (A,B,C,D) are required for each test headform within the size range of each shell/protective padding size combination. All helmet sizes declared by the manufacturer shall be tested.

If there is no test headform applicable to the shell/protective padding size combination, the next smaller available test headform shall be used.

Additional samples may be required if samples need to be dismantled or intentionally damaged during inspection in order to fulfil the requirements of testing. Such samples should not be used for other tests.

Helmets shall be stored at laboratory ambient conditions in accordance with EN 13087-1:2000, 4.2, for a minimum of 4h prior to conditioning and testing.

Table 1 — Summary of test sequence

Performance test	Sequence of tests	Sample letter for each headform size (of the 4 required samples)			
Area of protection	1	A	-	-	-
Field of vision	2	A	-	-	-
Peak deflection	3	A	-	-	-
Retention system effectiveness	4	A	B	C	-
Shock absorbing capacity	5	A ^a	B ^b	C ^c	-
Resistance to penetration	6	A ^d	B ^d	C ^d	-
Retention system strength	7	A ^d	B ^d	C ^d	-
Mechanical strength (for the largest and smallest helmet sizes)	8	-	-	-	D
^a Conditioning +50 °C ^b Conditioning -20 °C ^c Conditioning ageing and moisture ^d No Reconditioning					

In all tests for each headform, all the samples shall comply with the requirements.

If during sequential testing the helmet exhibits any damage to the retention system fixing points then the helmet shall be tested again to 5.11. If it fails this additional test then the helmet type shall not comply with this European Standard.

5.6 Testing atmosphere and conditioning

5.6.1 General

The testing atmosphere (laboratory ambient conditions) and conditioning of test specimens shall be in accordance with EN 13087-1, unless specified otherwise below.

5.6.2 High temperature conditioning

High temperature conditioning shall be performed at 50°C ± 2 °C.

5.6.3 Low temperature conditioning

Low temperature conditioning shall be performed at -20°C of ± 2 °C.

5.6.4 Artificial ageing and moisture conditioning

Expose the outer surface of the helmet successively to ultraviolet radiation for (48 ± 2) h by a 150 W xenon filled quartz lamp at a distance of (250 ± 10) mm from the nearest point on the helmet and then for 4 h to 6 h to a spray of water at ambient temperature of (20 ± 5) °C at the rate of (1000 ± 25) ml/min.

5.7 Shock absorption

5.7.1 General

Testing shall be performed as specified in EN 13087-2:2012, 5.3, falling headform method. Only the flat anvil shall be used.

5.7.2 Headform

Headforms 495, 535, 575, 605 and 625 shall be used, as appropriate to the size of the helmet being tested.

5.7.3 Impact speed

The impact speed shall be $(5,94 + 0,15/-0)$ m/s, which equates to a theoretical drop height of 1,8 m.

5.7.4 Test sites

In a test series the following sites should be impacted at least once,:

- the temporal, frontal, crown and rear area;
- ventilation feature or other aperture;
- retention fixing point, or as close as possible if the fixing point is outside the test area.

Impact each helmet once on each of two sites, the centres of which are within the test area described in 5.2 separated by at least 130 mm from each other and not closer than 50 mm to a penetration test site.

The separation of test sites shall be determined by measurement over the outer surface of the helmet.

5.7.5 Test period

For helmets tested following conditioning to 5.6.1, 5.6.2, 5.6.3, 5.6.4, the first impact shall be completed within 90 s following removal from conditioning. The 2nd impact shall be completed within 180 s following removal from conditioning.

5.8 Resistance to penetration

5.8.1 General

Testing shall be performed as specified in EN 13087-3, taking into account the following:

5.8.2 Striker

The conical striker shall be used.

5.8.3 Test block

The test block described in EN 13087-3, shall be a hemispherical test block with a radius (65 ± 5) mm and 130 mm diameter and a flat impact surface.

5.8.4 Impact energy

The impact energy shall be 14,7 J which is equivalent to a theoretical drop height of 500 mm. The tolerance is controlled by EN 13087-3.

5.8.5 Test sites

Impact each helmet once on each of four penetration test sites within the test area defined in 5.2 .

For each helmet, one test site shall be over a ventilation feature, or any other aperture, if present. In a test series as many other features as possible shall be assessed.

Each penetration test site shall be separated from any other test site (shock absorption or penetration test site) by not less than 50 mm, when measured over the outer surface of the helmet.

5.9 Mechanical strength

5.9.1 General

The helmet is subjected to transverse compressive forces and the deformations measured.

5.9.2 Apparatus

The apparatus shall have two guided rigid flat parallel plates with a minimum size of 300 mm x 250 mm having their edges radiused to $(10 \pm 0,5)$ mm.

The compression equipment shall be at least Class 1 accuracy both for force and extension measurements (EN ISO 7500-1).

5.9.3 Procedure

One sample of each of the largest and smallest helmet sizes shall be tested. The samples shall be tested in the state 'as-received'.

The helmet shall be placed transversely between two guided rigid flat parallel plates, with a minimum size of 300 mm x 250 mm, with the AA' plane aligned with the major centreline of the plates.

An initial force of 30 N shall be applied perpendicular to the plates, so that the helmet is subjected to lateral force. After 30 s the distance between the plates shall be measured (dimension x).

The force shall be increased by 200 N per minute, up to $630 \text{ N} \pm 20 \text{ N}$, and shall be held for 30 s, after which the distance between the plates shall again be measured (dimension y).

The force shall be decreased to 25 N within 30 s and then immediately increased to 30 N, and shall be held for 30 s, after which the distance between the plates shall again be measured (dimension z).

Measurements shall be made to the nearest millimetre, and the extent of damage, if any, shall be noted.

The maximum lateral deformation is the difference between dimensions x and y.

The residual lateral deformation is the difference between dimensions x and z.

5.10 Retention system strength

5.10.1 General

Testing shall be performed as specified in EN 13087-5, method 5.3, taking into account the following:

5.10.2 Headforms

Headforms complying with EN 960:2006 shall be used, as appropriate to the size of helmet being tested.

5.10.3 Drop height

The drop height of the falling mass shall be (250 ± 5) mm.

5.11 Retention system effectiveness

5.11.1 General

Testing shall be performed as specified in EN 13087-4, taking into account the following:

5.11.2 Headforms

Headforms complying with EN 960:2006 shall be used, as appropriate to the size of helmet being tested.

5.11.3 Direction of force application

The test shall be performed with the hook attached at the rear of the helmet.

5.11.4 Drop height

The drop height of the falling mass shall be (240 ± 5) mm.

5.11.5 Report

Report whether the helmet has remained on the headform.

The helmet shall be considered to have remained on the headform if the central vertical axis of the headform is protected by part of the helmet intended to provide coverage of the area of protection (see 5.2).

5.12 Peak deflection

5.12.1 Principle

The ability of the peak to deflect is assessed by applying a known load to it and measuring the resultant deflection.

5.12.2 Apparatus

The apparatus consists of a rigid base on to which a headform is fitted and includes a system to apply the load and measure the resulting deflection.

5.12.3 Test procedure

Place the helmet on the appropriate size headform and load it with a mass of $(12 \pm 0,1)$ kg to hold it securely in place. Freely suspend a mass of (2000 ± 10) g at a point (10 ± 1) mm from the edge of the peak and on the centre line of the front edge. Measure the deflection under load, in millimetres, at the lateral mid-point of the front edge of the peak after the load has been applied between 20 s to 30 s.

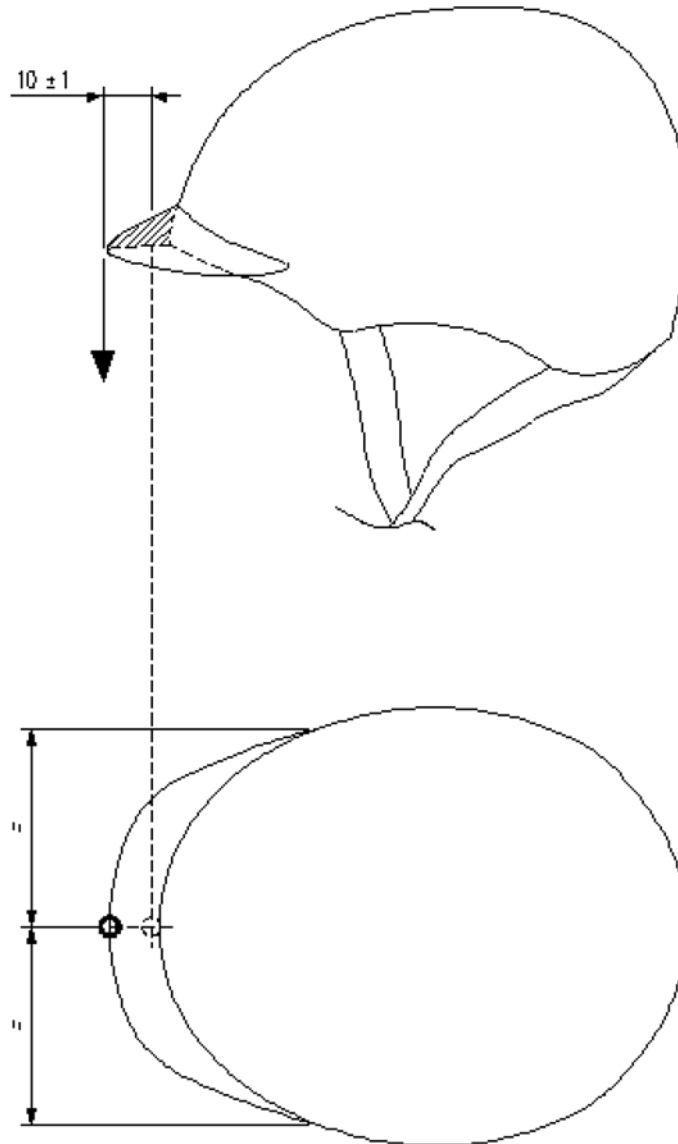


Figure 3 — Peak deflection measurement

6 Marking and labelling

6.1 Marking

Each helmet shall be marked with the requirements of this European Standard and shall carry visible, legible and unambiguous marking giving the following information:

- the number of this European Standard, i.e. EN 1384:2017;
- the name or trademark of the manufacturer;
- intended use of the helmet in a pictogram or text in the language of the country of sale;
- the designation of the model;
- size or size range of the helmet, quoted as the circumference (in cm) of the head which the helmet is intended to fit;

- f) the weight of the helmet (the mass in grams of the helmet size in question within 50 g of the weight stated);
- g) indication of the year and either the month or quarter of manufacture.

The markings shall be legible and shall be sufficiently durable that the marking shall remain legible throughout the life of the helmet.

6.2 Information and instruction for the user

Every helmet offered for sale shall have supplied with it an instruction / user guide which shall be legible indicating, in the language of the country of sale.

The instruction / user guide shall include statements or instructions that address the following requirements;

- a) how the helmet should fit and how the strap should always be correctly adjusted and used for maximum protection . In order to ensure that the helmet remains in position during riding, the retention system shall be adjusted to ensure that the movement of the helmet on the head is minimal;
- b) how to select the correct size and fit of helmet is crucial. Highlight that for children, never select a helmet that is too large on the basis that they will 'grow into it';
- c) WARNING that a helmet cannot always protect against injury;
- d) WARNING that a helmet is designed to absorb some of the energy of a blow by partial destruction of the shell or protective padding material, or both. This damage may not be visible and therefore any helmet which suffers an impact should be discarded and replaced by a new one;
- e) suitable accessories that can be used with the product (if applicable) ;
- f) WARNING that for accessories not approved by the manufacturer may affect the functionality and the performance of the helmet;
- g) information regarding protecting the helmet during storage and transport;
- h) any pictogram or symbols used for marking (6.1) shall be explained in the instruction / user guide;
- i) a statement that the materials used in the product do not cause skin disorders or are hazardous for the users health . If the user experiences any reaction during use of the helmet, use of it should be discontinued ;
- j) advice to the user for cleaning, maintenance or disinfection.

Annex A
(informative)

Significant technical changes between this European Standard and EN 1384:2012

The significant changes with respect to the first edition of EN 1384 are as listed below.

Table A.1 — Significant changes between this European Standard and EN 1384:2012

Clause/paragraph/table/figure	Change
Clause 2	The normative references in Clause 2 and in the text have been updated. EN 960 has been dated throughout the text.
Figure 3	New.
Clause 4 Extent of Coverage Field of vision Mechanical strength Shock Absorption	New requirement New requirement New requirement 2 tests required on same helmet
Clause 5 Test Sequence and number of samples Test sites Visual inspection Field of vision deformation Mechanical strength Shock Absorption	Number of samples increased and sequence of tests and number of samples defined in a Table Increased number of test sites New Test method defined New test method defined Drop height has been increased from 1.5m to 1.8m (impact speed)
Clause 6 The helmet shall be marked with its weight The intended use of the helmet	New new
Annex ZA	Has been updated.
NOTE The technical changes referred include the significant technical changes from the EN revised but is not an exhaustive list of all modifications from the previous version.	

Annex ZA (informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC Personal Protective Equipment

This European Standard has been prepared under the Commission's standardization request M/031 to provide one voluntary means of conforming to essential requirements of Directive 89/686/EEC on the approximation of the laws of the Member States relating to personal protective equipment.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Annex II of the Directive 89/686/EEC Personal Protective Equipment

Essential Requirements of Directive 89/686/EEC	Clause(s)/subclause(s) of this EN	Remarks/Notes
1.1.1. Ergonomics	4.1, 4.3, 4.8, 4.10	
1.2.1 Absence of risks and other inherent nuisance factors	4.4, 4.8, 4.8.2, 4.8.3, 4.9	
1.2.1.1 Suitable constituent materials	4.2	
1.2.1.2 Satisfactory surface condition of all PPE parts in contact with the user	4.3	
1.2.1.3. Maximum permissible user impediment	4.10	
1.3.1 Adaptation to users morphology	4.1, 4.8	
1.3.2 Lightness and design strength	4.7, 5.6	
1.4 Information supplied by the manufacturer	6.1, 6.2	
2.4. PPE subject to ageing	6.1 g)	
2.12 PPE bearing one or more identification or recognition marks directly or indirectly relating to health and safety	6.1	
3.1.1 Impact caused by falling or projecting objects and collision of parts of the body with an obstacle	4.5, 4,6	

NOTE Performance requirements for tangential impact (rotational) are not included. The next revision will address this.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Bibliography

- [1] EN ISO 4892-1, *Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance (ISO 4892-1)*
- [2] EN ISO 4892-2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (ISO 4892-2)*
- [3] EN ISO 4892-3, *Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps (ISO 4892-3)*
- [4] EN ISO 13688, *Protective clothing - General requirements (ISO 13688)*