



SLOVENSKI STANDARD

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Varovalna obutev za voznike motornih koles - Zahteve in preskusne metode

Protective footwear for motorcycle riders - Requirements and test methods

Schutzschuhe für Motorradfahrer - Anforderungen und Prüfverfahren

Chaussures de protection pour motocyclistes - Exigences et méthodes d'essai
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Protective footwear for motorcycle riders - Requirements and test methods

Chaussures de protection pour motocyclistes -
Exigences et méthodes d'essai

Schutzschuhe für Motorradfahrer - Anforderungen und
Prüfverfahren

This European Standard was approved by CEN on 27 September 2017.

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

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EN 13634:2017 (E)**European foreword**

This document (EN 13634:2017) has been prepared by Technical Committee CEN/TC 161 “Foot and leg protectors”, 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of an identical text or by endorsement, at the latest by June 2018, and conflicting national standards shall be withdrawn at the latest by June 2018.

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 13634:2015.

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.

The following significant technical changes have been introduced in comparison with the former edition EN 13634:2015:

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- a) the requirement for an overall performance level has been removed and the associated user information requirement amended accordingly;
 - b) the marking requirement has been changed with an additional mandatory marking number for the upper height;
 - c) Table 3 has been revised to include an additional column for H1 requirements;
 - d) the sampling requirements have been clarified in 4.4.4 and 4.4.5;
 - e) Annex B (informative) has been replaced by a note in 4.1;
 - f) clarification of the “assessor” has been included in Annex A.

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

Motorcyclists' footwear is intended to give a degree of mechanical protection to the foot, optionally the ankle and/or part of the shin in accidents without significantly reducing the ability of the rider to control the motorcycle and operate the foot controls. The particular hazards in motorcycle accidents are abrasion with the road surface plus impacts with the motorcycle, conflicting vehicles, road furniture and road surfaces. Road surface injuries are worse when the foot is trapped under the motorcycle during sliding impacts. The standard sets out a number of basic requirements considered essential for this type of footwear including a number of ergonomic requirements.

This European Standard includes several properties which have two performance levels in terms of the protection afforded. These cover the degree of risk or hazard that a motorcyclist will face in terms of the type of riding and the nature of the accident. Where riders feel that their riding style or sport exposes them to an increased accident risk 'Level 2' of each of these performance features offers increased performance. However it is likely that this higher performance level has an increased penalty for the weight and comfort so may not be acceptable to all riders.

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EN 13634:2017 (E)**1 Scope**

This European Standard applies to protective footwear for motorcycle riders for use while riding motorcycles for on or off road activities. It specifies the requirements for protection, ergonomic characteristics, innocuousness, mechanical properties, marking and information for users. It also specifies the appropriate test methods.

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 1621-1, *Motorcyclists' protective clothing against mechanical impact - Part 1: Motorcyclists' limb joint impact protectors - Requirements and test methods*

EN 13595-2:2002, *Protective clothing for professional motorcycle riders - Jackets, trousers and one-piece or divided suits - Part 2: Test method for determination of impact abrasion resistance*

EN 13595-4:2002, *Protective clothing for professional motorcycle riders - Jackets, trousers and one-piece or divided suits - Part 4: Test method for determination of impact cut resistance*

EN ISO 4045, *Leather - Chemical tests - Determination of pH (ISO 4045)*

EN ISO 11642, *Leather - Tests for colour fastness - Colour fastness to water (ISO 11642)*

EN ISO 17075-1, *Leather - Chemical determination of chromium(VI) content in leather - Part 1: Colorimetric method (ISO 17075-1)*

EN ISO 17075-2, *Leather - Chemical determination of chromium(VI) content in leather - Part 2: Chromatographic method (ISO 17075-2)*

EN ISO 20344:2011, *Personal protective equipment - Test methods for footwear (ISO 20344:2011)*

EN ISO 20345:2011, *Personal protective equipment - Safety footwear (ISO 20345:2011)*

ISO 4649:2017, *Rubber, vulcanized or thermoplastic — Determination of abrasion resistance using a rotating cylindrical drum device*

ISO 5423:1992, *Moulded plastics footwear — Lined or unlined polyurethane boots for general industrial use — Specification*

3 Terms and definitions

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

3.1**optional requirement**

additional requirement(s) claimed by the footwear manufacturer and associated with a specific marking

4 Basic requirements for motorcycle footwear

4.1 General

The minimum number of samples to be tested in order to check compliance with the requirements specified in this standard is detailed in Table 1. Unless otherwise specified, all samples shall be conditioned and tested in an environment of (23 ± 2) °C and (50 ± 5) % rh (relative humidity).

This standard defines 4 specific properties for motorcycle footwear with 2 possible performance level (height of the upper, impact abrasion, impact cut, transverse rigidity). To comply with this European Standard, the motorcycle footwear shall achieve at least performance level 1 for all four properties.

For each of the required measurements performed in accordance with this standard, a corresponding estimate of the uncertainty of measurement should be evaluated. One of the following approaches should be used:

- - a statistical method, e.g. that given in ISO 5725-2 [2];
- - a mathematical method, e.g. that given in ISO/IEC Guide 98-3 [3];
- - uncertainty and conformity assessment as given in ISO/IEC Guide 98-4 [4];
- - JCGM 100:2008[1]

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4.2 Design

4.2.1 Height of upper

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All footwear shall be classified as either performance level 1 or performance level 2:

Performance level 1:

Footwear shall meet the minimum upper height requirements in accordance with Table 2.

Performance level 2:

Footwear shall meet the minimum upper height requirements in accordance with Table 3.

Table 1 — Minimum number of samples and test specimens and their origin

Property	Clause	Samples	Take test specimens only from footwear
Height of the upper	4.2.1	One pair in each of 3 sizes	YES
Upper/outsole bond strength	4.3.1	One shoe in each of 3 sizes	YES
Upper pH value	4.4.1	One sample only of each leather	NO
Upper Chromium VI content	4.4.2	One sample only of each leather	NO
Upper Colour Dye fastness	4.4.3	One sample only of each material	NO
Upper impact abrasion resistance	4.4.4	One sample from each combination of material	NO
Upper Impact cut resistance	4.4.5	One sample from each combination of material	NO
Lining Tear strength	4.5.2	One sample only of each material	NO
Lining Abrasion resistance	4.5.3	One sample only of each material	NO
Lining pH value	4.5.4	One sample only of each leather	NO
Lining Chromium VI content	4.5.5	One sample only of each leather	NO
Lining colour fastness	4.5.6	One sample from each material	NO
Outsole thickness and cleat height	4.6.1	One shoe in each of 3 sizes	YES
Outsole abrasion resistance	4.6.2	One shoe in each of 3 sizes	YES
Outsole hydrolysis	4.6.3	One shoe in each of 3 sizes	YES
Outsole interlayer bond strength	4.6.4	One shoe in each of 3 sizes	YES
Ergonomics	4.7	3 pairs in different sizes	YES
Transverse rigidity of the whole footwear	4.8	One pair in each of 3 sizes	YES
Insole/Insock abrasion	4.10.2	1 shoe from each of 3 sizes or material	NO
Insole/Insock pH value	4.10.3	One sample of each leather	NO
Insole/Insock chromium VI content	4.10.4	One sample of each leather	NO
Impact energy protection ankle / shin	5.1	One pair in each of 3 sizes	YES
Water resistance	5.2	3 pair of shoes (minimum of 2 different sizes)	YES
Resistance to fuel oil of the outsole	5.3	One shoe in each of 3 sizes	YES
Slip resistance of outsoles	5.4	One shoe in each of 3 sizes	YES
Permeable uppers	5.5	One sample only of each material	YES
Insole and Insocks water absorption and desorption	5.6	1 shoe from each of 3 sizes or material	NO

Table 2 — Minimum height of upper of performance level 1

Footwear size		H2 (Figure 1) in mm	H1 (Figure 1) in mm
Paris Point	UK		
36 and below	Up to 3 ½	103	64
37 and 38	4 to 5	105	66
39 and 40	5 ½ to 6 ½	109	68
41 and 42	7 to 8	113	70
43 and 44	8 ½ to 10	117	72
45 and above	10 ½ and above	121	73

Table 3 — Minimum height of upper of performance level 2

Footwear size		H2 (Figure 1) in mm	H1 (Figure 1) in mm
Paris Point	UK		
36 and below	Up to 3 ½	162	113
37 and 38	4 to 5	165	115
39 and 40	5 ½ to 6 ½	172	119
41 and 42	7 to 8	178	123
43 and 44	8 ½ to 10	185	127
45 and above	10 ½ and above	192	131

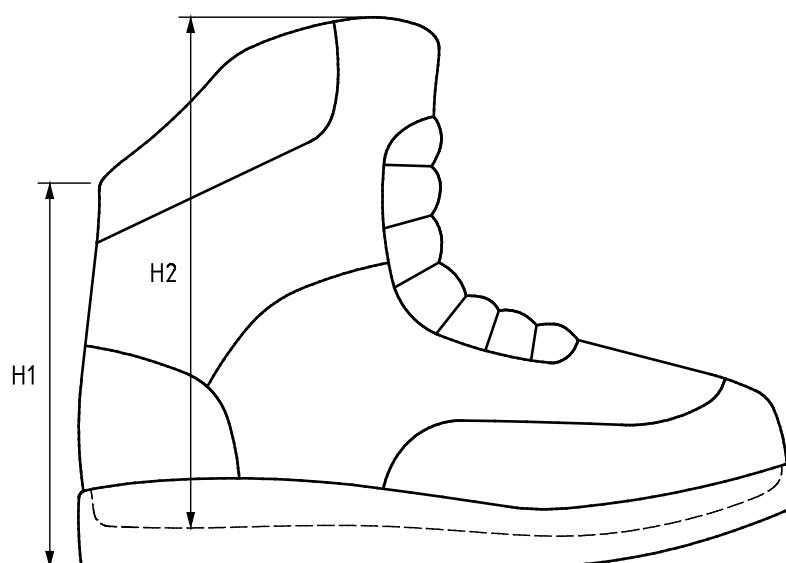


Figure 1 — Footwear minimum upper height definition of H1 and H2

EN 13634:2017 (E)**4.2.2 Whole upper**

Upper material shall meet the requirements of 4.4.

4.3 Whole footwear**4.3.1 bond strength**

When footwear is tested in accordance with the method specified in EN ISO 20344:2011, 5.2, the bond strength shall be not less than 4,0 N/mm unless there is tearing of the sole material in which case the bond strength shall be not less than 3,0 N/mm.

4.3.2 Innocuousness

Footwear protecting against risks when riding a motorcycle shall not adversely affect the health or hygiene of the user. Footwear protecting against risks when riding a motorcycle shall be made of materials, such as textiles, leather, rubbers, plastics that have been shown to be chemically suitable. The materials shall not in the foreseeable conditions of normal use release or degrade to release substances generally known to be toxic, carcinogenic, mutagenic, allergenic, toxic to reproduction or otherwise harmful. Information claiming that the product is innocuous shall be checked.

NOTE: Information about critical substances in footwear and footwear components can be found in ISO/TR 16178.

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4.4 Uppers**4.4.1 pH value**

When leathers are tested in accordance with EN ISO 4045, the pH value shall be not less than 3,2 and, if the pH is less than 4, the difference figure shall be less than 0,7. All individual leathers shall be assessed.

4.4.2 Chromium VI content

The quantity of Chromium VI in footwear containing leather shall not exceed 3,0 mg/kg when determined according to the test method specified in EN ISO 17075-1 or EN ISO 17075-2.

If the footwear includes different types of leather, whether in contact with the skin or not, each leather type shall be tested separately and comply with the above requirement. One sample shall be taken from different items of footwear for each leather type.

4.4.3 Colour fastness

Footwear shall not be manufactured from material containing dyes which will readily migrate when it becomes wet with water. When any inner surfaces of the upper that will be adjacent to the wearers foot or hose (unnecessary if not coloured or if the footwear has a lining, in this case apply 4.5.6) are tested in accordance with EN ISO 11642, the change in colour of any component of the multifibre fabric shall be not worse than Grey Scale rating 3.

4.4.4 Impact Abrasion resistance

When the full thickness of the upper (i.e. upper + lining) for each combination (sample) of materials present is tested in accordance with the procedure in EN 13595-2:2002 (with a deviation to test 3 specimens of each combination instead of 6), the impact abrasion resistance shall be classified as in Table 4. All material type combinations shall be tested and the upper classified on the lowest mean result from all combinations present (see Table 4):