SLOVENSKI STANDARD
SIST EN 13634:2011

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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 des motocyclistes - Exigences et méthodes d'essai

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Protective footwear for motorcycle riders - Requirements and test methods

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

Schutzschuhe für Motorradfahrer - Anforderungen und Prüfverfahren

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 13634:2010) 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of an identical text or by endorsement, at the latest by June 2011, and conflicting national standards shall be withdrawn at the latest by June 2011.

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 13634:2002.

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.

This document is a revision of EN 13634:2002, which was prepared by CEN/TC162.

Annex A is normative. Annex B is informative.

The following significant technical changes have been introduced in comparison with the former edition EN 13634:2002:

a) The title and scope have been modified; the scope is not any more limited to professional motorcycle riders;

b) Two distinct performance levels have been introduced;

c) Definitions for protective layer and professional rider were deleted;

d) Minimum number of samples and test specimens and their origin specified;

e) Height of upper specified depending on the footwear size;

f) Design requirements for seams specified more precisely in Figure 1;

g) Basic requirements for insoles and insocks specified in more detail;

h) Requirement added for CrVI content of leather in upper and lining;

i) Abrasion resistance requirement modified for upper, linings and insoles and insocks;

j) Impact zones and material areas for upper resistance to impact cut specified;

k) Requirement and test method for impact cut resistance modified;

l) Optional requirement for slip resistance of outsole included;

m) Optional requirement for permeable uppers included;

n) Marking requirements modified;

o) Informative annex on uncertainties of measurement added;

p) With regards to pH requirements of leather materials, the minimum acceptable threshold had been lowered from 3.5 to 3.2 (hence "easier to pass");

q) Transverse rigidity assessment of the whole footwear was changed introducing an "easier" level 1 requirement of 1,0 KN (at 20 mm compression), whilst keeping the previous requirement of 1,5 KN for the level 2 performance.

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 and the United Kingdom.

Introduction

Motorcyclists' footwear is intended to give a degree of mechanical protection to the foot and ankle 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.

For a number of tests, this European standard includes two performance levels in terms of the protection afforded. The degree of risk or hazard that a motorcyclist will face is closely linked to the type of riding and the nature of the accident. Within standard EN 13634:2010 'Level 1' performance is deemed as the minimum level required so that the footwear provides useful protection in an accident, and offers footwear with an optimum comfort level to suit all riding types. Where riders feel that their riding style or sport exposes them to an increased accident risk 'Level 2' has been provided, which offers increased performance — however it is likely that this additional level of protection has an increased penalty for the weight and comfort so may not be acceptable to all riders.

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 describes the appropriate test methods.

2 Normative references

The following referenced documents are indispensable for the application 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 1621-1:1997, *Motorcyclists' protective clothing against mechanical impact — Part 1: Requirements and test methods for impact protectors*

EN 13595-2, *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, *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 4045:2008)*

EN ISO 11642, *Leather — Tests for colour fastness — Colour fastness to water (ISO 11642:1993)*

EN ISO 17075:2007, *Leather — Chemical tests — Determination of chromium(VI) content (ISO 17075:2007)*

EN ISO 20344:2004, *Personal protective equipment — Test methods for footwear (ISO 20344:2004)*

EN ISO 20345:2004[1)], *Personal protective equipment — Safety footwear (ISO 20345:2004)*

ISO 4649:2010, *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
zone of specific protection
zone of protection
area of footwear that is intended to provide additional specific protection, and is subject to specific testing

1) EN ISO 20345:2004 is impacted by the stand-alone amendment EN ISO 20345:2004/A1:2007.

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) ^{o}C and (50 +/- 5) % rh.

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
Seams	4.2.3	One pair in each of 3 sizes	YES
Upper/outsole bond strength	4.3.2	One pair in each of 3 sizes	YES
pH value	4.4.1	One sample only of each leather	NO
Chromium VI content	4.4.2	One sample only of each leather	NO
Dye fastness	4.4.3	One sample only of each material	NO
Abrasion resistance	4.4.4	5 test specimens from each material	NO
Impact cut resistance	4.4.5	One sample only of each 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
Insocks	4.6	One sample only	NO
Outsole thickness and cleat height	4.7.1	One pair in each of 3 sizes	YES
Outsole abrasion resistance	4.7.2	One pair in each of 3 sizes	YES
Outsole hydrolysis	4.7.3	One pair in each of 3 sizes	YES
Outsole interlayer bond strength	4.7.4	One pair in each of 3 sizes	YES
Ergonomics	4.8	One pair in each of 3 sizes	YES
Transverse rigidity of the whole footwear	4.9	One pair in each of 3 sizes	YES
Impact energy protection ankle / shin	5.1	One pair in each of 3 sizes	YES
Water resistance	5.2	One pair in each of 3 sizes	YES
Resistance to fuel oil	5.3	One pair in each of 3 sizes	YES
Slip resistance of outsoles	5.4	One pair in each of 3 sizes	YES
Permeable uppers	5.5	One sample only of each material	YES
NOTE 3 Sizes = 1 pair in the smallest available size + 1 pair in the largest available size + 1 pair from the middle of the size range			

4.2 Design

4.2.1 Height of upper

The height of the upper measured in accordance with EN ISO 20344:2004, 6.2 shall be as given in Table 2.

Table 2 – Height of upper

Footwear size		Min height mm
Paris Point	**UK**	
36 and below	Up to 3½	162
37 and 38	4 to 5	165
39 and 40	5½ to 6½	172
41 and 42	7 to 8	178
43 and 44	8½ to 10	185
45 and above	10½ and above	192

4.2.2 Whole upper

Upper material shall meet the requirements in 4.4.

4.2.3 Seams

Where present, overlapping constructional seams on the outer side of the forepart of the boot in Zone A (defined in Figure 1 a) as below height *B* and less than 0,5 x L from the toe end) shall be constructed such that the exposed edge of the material overlap is not facing the front of the boot, see Figures 1 b) and 1 c).