



SLOVENSKI STANDARD

SIST EN 13634:2002

01-november-2002

Varovalna obutev za poklicne voznike motornih koles - Zahteve in preskusne metode

Protective footwear for professional motorcycle riders - Requirements and test methods

Schutzschuhe für professionelle Motorradfahrer - Anforderungen und Prüfverfahren

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

ITeH STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **EN 13634:2002**

SIST EN 13634:2002
<https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002>

ICS:

13.340.50	Varovanje nog in stopal	Leg and foot protection
43.140	Motorna kolesa in mopedi	Motor cycles and mopeds

SIST EN 13634:2002

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13634:2002

<https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002>

EUROPEAN STANDARD

EN 13634

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2002

ICS 13.340.50

English version

Protective footwear for professional motorcycle riders - Requirements and test methods

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

Schutzschuhe für professionelle Motorradfahrer -
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 14 March 2002.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

[SIST EN 13634:2002](https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002)

<https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002>



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword.....	3
Introduction	4
1 Scope	4
2 Normative references	4
3 Terms and definitions.....	4
4 Requirements	5
4.1 Design	5
4.2 Whole footwear	5
4.3 Uppers pH value.....	6
4.4 Linings	6
4.5 Insoles.....	6
4.6 Outsoles.....	6
4.7 Fit & ergonomics.....	8
4.8 Size marking	8
4.9 Dye fastness	8
4.10 Abrasion resistance of the upper.....	8
4.11 Cut resistance of the upper	8
4.12 Transverse rigidity of footwear bottom	8
5 Optional requirements.....	8
5.1 Impact energy protection of ankle and shin	8
5.2 Zones of protection	9
5.3 Water resistance	9
5.4 Resistance to fuel oil of outsole.....	9
6 Test Methods	9
6.1 Determination of the transverse rigidity of the footwear.....	9
6.2 Determination of penetration resistance to water	10
6.3 Impact energy protection of ankle and shin	13
7 Marking	17
8 Wearer information and instructions for use.....	17
9 Pictogram.....	18
Annex A (normative) Ergonomic and size testing	19
A.1 Principle	19
A.2 Test panel	19
A.3 Procedure for footwear size verification	19
A.4 Procedure for ergonomic evaluation	19
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	21

Foreword

This document EN 13634:2002 has been prepared by Technical Committee CEN/TC 162, "Protective clothing including hand and arm protection and lifejackets", the secretariat of which is held by DIN.

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 2002, and conflicting national standards shall be withdrawn at the latest by December 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.

Annex A is normative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13634:2002](https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002)

<https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002>

Introduction

Motorcyclists' footwear is intended to give protection against ambient conditions without unduly impairing the user's dexterity in controlling the motorcycle and operating the foot controls. In addition, the footwear is intended to give a degree of mechanical protection to the foot and ankle in accidents. The particular hazards in motorcycle accidents are impacts with the motorcycle, conflicting vehicles and road furniture and with 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 being essential for this type of footwear including a number of ergonomic requirements.

1 Scope

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

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For a dated reference, subsequent amendments to or revisions of any these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies, (including amendments).

EN 344:1992, *Requirements and test methods for safety protective and occupational footwear for professional use.*

EN 388:1994, *Protective gloves against mechanical risks.*

EN 1621-1, *Motorcyclists' protective clothing against mechanical impact - Part 1: Requirements and test methods for impact protectors.*

prEN 13595-2, *Protective clothing for professional motorcycle riders — Jackets, trousers and one-piece or divided suits — Part 2: Determination of impact abrasion resistance.*

ISO 4045, *Leather-Determination of pH.*

ISO 4649, *Rubber - 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.*

ISO 11642, *Leather — Tests for colour fastness — Colour fastness to water.*

3 Terms and definitions

For the purposes of this European Standard, 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

3.2

protective layer (of motorcyclists' footwear)

leather or fabric in a single piece or multiple pieces or layers that, joined together by seams or other means, make up the continuous and mechanically strong structure of the footwear

NOTE The protective layer may be lined and may be fitted with additional decorative and safety features to its outer surface.

3.3

professional rider

person who is employed to provide or contracts to perform for reward, the services requiring the riding of a motorcycle

Examples are:

- a) the delivery of letters, packets or other small freight;
- b) the transport of passengers by motorcycle;
- c) emergency medical treatment;
- d) vehicle breakdown support.

4 Requirements

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Motorcyclists footwear complying with this European Standard shall meet the requirements in clause 4.

4.1 Design

[SIST EN 13634:2002](https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002)

4.1.1 Height of upper

<https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002>

When measured in accordance with EN 344:1992, 4.2, the minimum height shall be at least 160 mm.

4.1.2 Whole upper

The whole of the upper shall be closed.

4.1.3 Seams

Except when material overlays part of the upper and at the counter, seams shall not face forward and shall not be in the outer joint or toe area of the footwear.

4.2 Whole footwear

4.2.1 Insole Construction

An insole shall be present in such a way that it cannot be removed without damaging the footwear.

4.2.2 Upper/outsole bond strength

When footwear is tested in accordance with the method described in EN 344:1992, 5.1, the bond strength shall be not less than 4,0 N/mm.

EN 13634:2002 (E)**4.3 Uppers pH value**

When leather uppers are tested in accordance with the method described in ISO 4045, components shall have a pH of between 3,5 and 9,5 and if the pH is less than 4, the difference figure shall be less than 0,7.

4.4 Linings

When present, linings shall conform to the following requirements.

4.4.1 Tear strength

When determined in accordance with the appropriate method, the tear strength of the lining shall be not less than 30 N for leather and 15 N for coated fabrics and textiles.

Testing shall be carried out according to 4.5.2 of EN 344:1992.

4.4.2 Abrasion resistance

When tested in accordance with the method described in 5.14 of EN 344:1992, the wearing surface of textile linings shall not develop any holes before the following number of cycles has been performed:

- dry 25.600 cycles;
- wet 12.800 cycles.

4.4.3 pH value

When leather linings are tested in accordance with the method described in ISO 4045, leather components shall have a pH value between 3,5 and 9,5, and if the pH is less than 4, the difference figure shall be less than 0,7.

<https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002>

4.5 Insoles**4.5.1 Water absorption and desorption**

When tested in accordance with the method described in 5.15 of EN 344:1992 the water absorption of the layer of material adjacent to the foot shall be not less than 35 % and the water desorption shall be not less than 40 % of the water absorbed. Footwear fitted with non-absorbent insoles, e. g. solid plastic type materials, are acceptable if covered. The abrasion test on the cover material will be carried out.

4.5.2 Abrasion resistance

When non-leather insoles are tested in accordance with the method described in 5.16 of EN 344:1992 there shall be no surface tearing before 400 cycles.

4.5.3 pH value

When leather insoles are tested in accordance with the method described in ISO 4045, the pH value shall be between 3,5 and 9,5, and if the pH is less than 4, the difference figure shall be less than 0,7.

4.6 Outsoles**4.6.1 Thickness and cleat height**

When cleated soles are used, the shaded area as shown in Figure 1 shall have cleats which are open to the side. The minimum depth of cleat will be 2,0 mm (d_2). The minimum thickness of non-cleated outsoles at any point shall be 4 mm (d_1). The periphery of the soles may be tapered as shown in Figure 2.

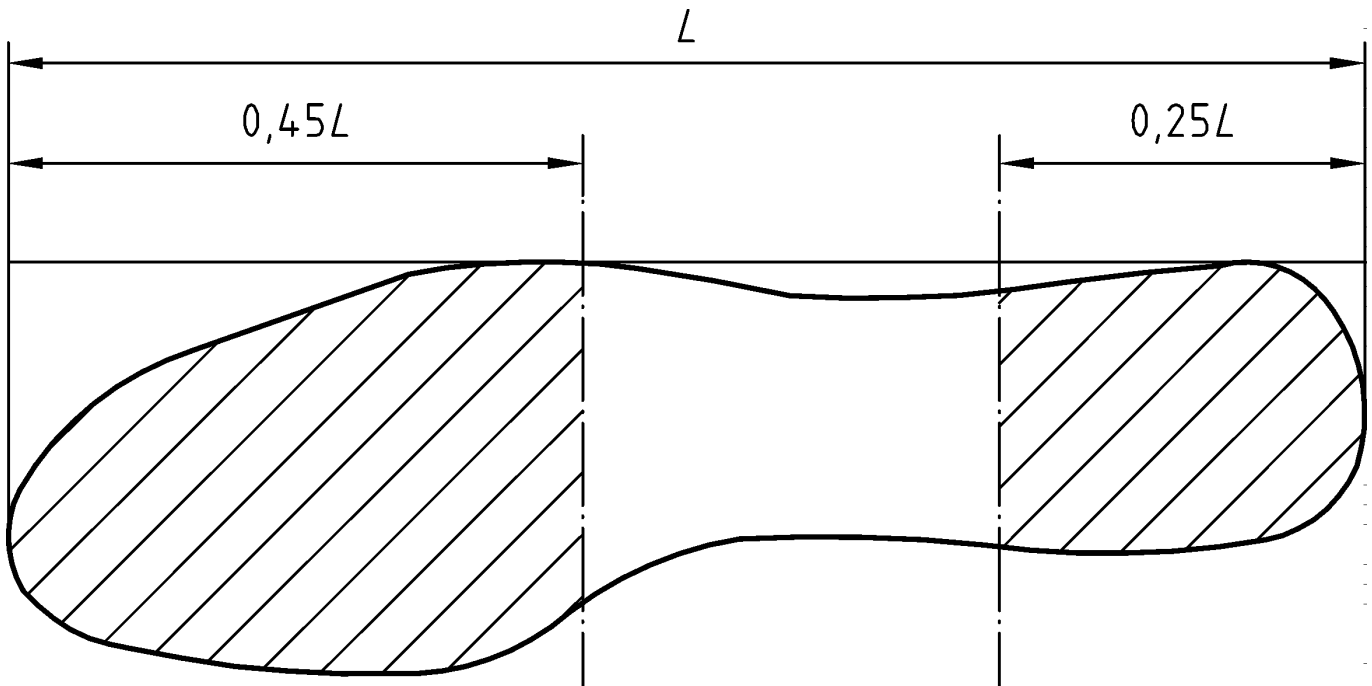
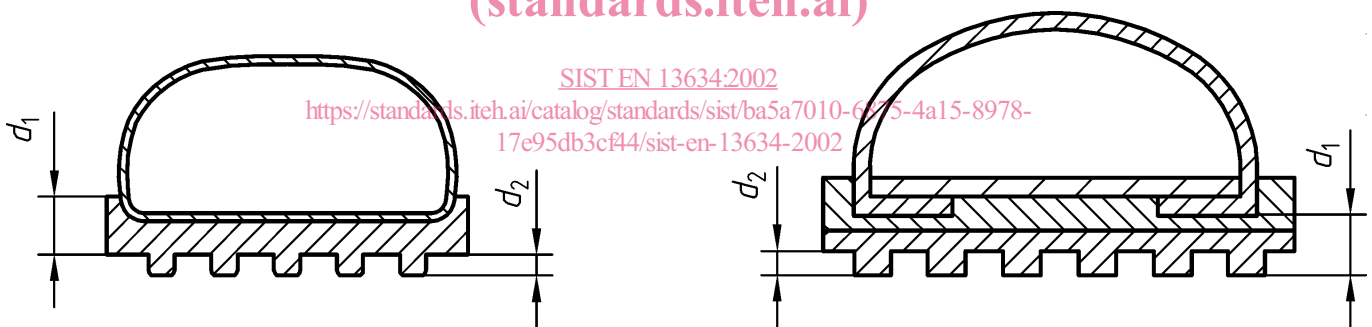


Figure 1 — Cleated area
 iTeh STANDARD PREVIEW
 (standards.iteh.ai)



Key
 d_1 Minimum thickness
 d_2 Minimum depth

Figure 2 — Thickness of outsole

4.6.2 Abrasion resistance

When non-leather outsoles other than those from all-rubber or all-polymeric footwear are tested in accordance with the method described in Method A of ISO 4649 (with a vertical force of 10 N over an abrasion distance of 40 m), the relative volume loss shall be not greater than 250 mm^3 for materials with a density of 0,9 g/ml or less and not greater than 150 mm^3 for materials with a density higher than 0,9 g/ml. Test pieces shall be taken from the forepart region of the sole.

4.6.3 Hydrolysis

When polyurethane outsoles are tested in accordance with the method described in ISO 5423:1992, annex C, after being prepared and conditioned as described in annex E of that standard, the cut growth shall be not greater than 6 mm before 150 000 flex cycles. The thickness of the test piece shall be 3 mm and conditioning at ambient temperature shall be carried out at $23 \text{ °C} \pm 2 \text{ °C}$.

EN 13634:2002 (E)

4.6.4 Interlayer bond strength

When tested in accordance with the method described in EN 344:1992, 5.1, the bond strength between the outer or cleated layer and the adjacent layer shall be not less than 4,0 N/mm.

4.7 Fit & ergonomics

When tested in accordance with the method described in annex A, the assessor shall be able to carry out all the defined movements without any significant problem being encountered.

When fitted on feet of the correct size, the footwear will remain secure on the foot whilst undertaking the defined movements.

4.8 Size marking

Footwear shall be marked with a nationally recognised size system within the EU.

4.9 Dye fastness

Footwear shall not be manufactured from material containing dyes which will readily migrate when it becomes wet with water. When testing upper, lining as well as sock lining or insole (not necessary if uncoloured) in accordance with ISO 11642, the change in colour of any component of the multifibre fabric shall be not worse than Grey Scale rating 3.

4.10 Abrasion resistance of the upper

When tested in accordance with the procedure in prEN 13595-2, the abrasion resistance of the upper shall be classified as:

- level 1 abrasion resistance not less than 5 s;
- level 2 abrasion resistance not less than 12 s.

4.11 Cut resistance of the upper

When tested according to EN 388:1994, 6.2, the performance of the whole of the footwear against blade cut resistance (index) shall be classified as:

- level 1 minimum blade cut resistance: 2,5;
- level 2 minimum blade cut resistance: 5,0.

4.12 Transverse rigidity of footwear bottom

When tested according to the method given in 6.1, the transverse rigidity shall be not less than 1,5 kN.

5 Optional requirements

5.1 Impact energy protection of ankle and shin

When tested in accordance with the method given in 6.3.1 the transmission force of the ankle (inner and outer side) or shin region shall be not more than the values given in Table 1.

Table 1

	Impact energy J	Transmitted force kN
Ankle	10	5
Shin	10	5

5.2 Zones of protection

It is recommended that footwear shall have zones of protection against impacts of the minimum dimensions given in Table 2. The definition of these zones and their position is given in 6.3.2. If manufacturers use different sizes or shapes of protection, these shall be defined in the user information and the reasons for the choice given.

Table 2 — Dimensions of the zones of protection of footwear

Dimension in millimetres

Size (Paris Points)	English	C (min)	D (min)	E (min)	F (min)	G (max)	H (min)
36 & below	3 & below	145	65	53	85	17	45
37 & 38	4 & 5	150	70	55	90	18	50
39 & 40	6	155	75	58	95	19	55
41 & 42	7 & 8	160	80	60	100	20	60
43 & 44	9 & 10	165	85	63	105	21	65
45 & above	11 & above	170	90	65	110	22	70

5.3 Water resistance

<https://standards.iteh.ai/catalog/standards/sist/ba5a7010-6875-4a15-8978-17e95db3cf44/sist-en-13634-2002>

When tested in accordance with the method described in 6.2, the total area of water penetration shall not be greater than 3 cm².

5.4 Resistance to fuel oil of outsole

When tested in accordance with the method described in EN 344: 1992, 5.19.1, the increase in volume of non-leather outsoles shall be not greater than 12 %.

If the material shrinks or becomes brittle when tested in accordance with the method described in EN 344:1992, 5.19.1, a further test specimen shall be taken and tested in accordance with the method described in EN 344:1992, 5.19.2. The cut growth shall be not greater than 6 mm before 150 000 cycles.

6 Test Methods

6.1 Determination of the transverse rigidity of the footwear

6.1.1 Principle

The load required to bend a shoe in the transverse direction in the joint region is measured in a compression testing machine apparatus.