



**SLOVENSKI STANDARD**  
**SIST EN ISO 17249:2005**  
**01-marec-2005**

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Safety footwear with resistance to chain saw cutting - (ISO 17249:2004)

Sicherheitsschuhe mit Schutz gegen Kettensägenschnitte (ISO 17249:2004)

Chaussures de sécurité résistantes aux coupures de scie à chaîne (ISO 17249:2004)

**Ta slovenski standard je istoveten z: EN ISO 17249:2004**

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**ICS:**

13.340.50      Varovanje nog in stopal      Leg and foot protection

**SIST EN ISO 17249:2005**      en

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ICS 13.340.50

English version

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Chaussures de sécurité résistantes aux coupures de scie à  
chaîne (ISO 17249:2004)

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(ISO 17249:2004)

This European Standard was approved by CEN on 16 January 2004.

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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 Central Secretariat has the same status as the official versions.

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## Foreword

This document (EN ISO 17249:2004) has been prepared by Technical Committee CEN/TC 161 "Foot and leg protectors", the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 94 "Personal safety - Protective clothing and equipment".

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of an identical text or by endorsement, at the latest by March 2005, and conflicting national standards shall be withdrawn at the latest by March 2005.

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.

Annexes A and ZB are normative. Annex ZA is informative.

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

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## 1 Scope

This European Standard specifies requirements for safety footwear with resistance to chain saw cutting.

## 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 dated references, subsequent amendments to or revisions of any of 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 381-3, *Protective clothing for users of hand-held chain-saws — Part 3: Test methods for footwear*

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

EN ISO 20345:2004, *Personal protective equipment - Safety footwear (ISO 20345:2004)*

## 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN ISO 20345:2004 and the following term and definition apply.

### feather line

the line of a shoe where the upper meets the bottom, the part of the bottom involved being the welt, rand, or sole, depending on the method of shoe construction

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## 4 Classification

Safety footwear with resistance to chain saw cutting shall be classified in accordance with Table 1 of EN ISO 20345:2004.

## 5 Requirements

### 5.1 General

Four classes of safety footwear with varying resistance to chain saw cutting are specified according to the different chain saw speeds.

The uncertainty of measurement for each test method described in this standard shall be assessed in accordance with annex A.

Safety footwear with resistance to chain saw cutting shall conform to the requirements given in Table 1, Table 2, Table 3 and Table 4.

Table 1 — Requirements

	Requirement	Reference		Classification		Symbol
		EN ISO 20345:2004	This standard	I	II	
<b>Design</b>	Height of upper	5.2.1		X	X	
	Seat region:	5.2.2		X	X	
	Design		5.2	X	X	
	Construction		5.3	X	X	
<b>Whole footwear</b>	Sole performance:	5.3.1				
	Construction	5.3.1.1		X		
	Upper/outsole bond strength	5.3.1.2		X		
	Toe protection:	5.3.2				
	General	5.3.2.1		X	X	
	Internal length of toecaps	5.3.2.2		X	X	
	Impact resistance	5.3.2.3		X	X	
	Compression resistance	5.3.2.4		X	X	
	Behaviour of toecaps	5.3.2.5		X	X	
	Leak proofness	5.3.3			X	
	Specific ergonomic features	5.3.4		X	X	
	Penetration resistance	6.2.1		O	O	P
	Electrical properties:	6.2.2				
	Antistatic footwear	6.2.2.2		*	*	A
	Electrically insulating footwear	6.2.2.3		*	*	I
	Resistance to inimical environments:	6.2.3				
	Heat insulation of sole complex	6.2.3.1		*	*	HI
	Cold insulation of sole complex	6.2.3.2		*	*	CI
	Energy absorption of seat region	6.2.4		*	*	E
	Water resistance	6.2.5		*		WR
Metatarsal protection	6.2.6		*	*	M	
Ankle Protection	6.2.7		*	*	AN	
Resistance to chain saw cutting		5.4		X	X	
<b>Upper</b>	General	5.4.1		X	X	
	Thickness	5.4.2			X	
	Tear strength	5.4.3		X		
	Tensile properties	5.4.4		X	X	
	Flexing resistance	5.4.5			X	
	Water vapour permeability and coefficient	5.4.6		X		
	pH value	5.4.7		X		
	Hydrolysis	5.4.8			X	
	Chromium VI content	5.4.9		X		
	Water penetration and water absorption	6.3.1		*		
	Upper construction	6.3.2		X		
	Cut resistance	6.3.3		*	*	CR

Table 1 (continued) — Requirements

	Requirement	Reference		Classification		Symbol
		EN ISO 20345:2004	This standard	I	II	
<b>Vamp lining</b>	Tear strength	5.5.1		X		
	Abrasion resistance	5.5.2		X		
	Water vapour permeability and coefficient	5.5.3		X		
	pH value	5.5.4		X		
	Chromium VI content	5.5.5		X		
<b>Quarter lining</b>	Tear strength	5.5.1		O		
	Abrasion resistance	5.5.2		O		
	Water vapour permeability and coefficient	5.5.3		O		
	pH value	5.5.4		O		
	Chromium VI content	5.5.5		O		
<b>Tongue</b>	Tear strength	5.6.1		O		
	pH value	5.6.2		O		
	Chromium VI content	5.6.3		O		
<b>Outsole</b>	Thickness	5.8.1		X	X	
	Tear strength	5.8.2		X		
	Abrasion resistance	5.8.3		X	X	
	Flexing resistance	5.8.4		X	X	
	Hydrolysis	5.8.5		X	X	
	Interlayer bond strength	5.8.6		O	O	
	Resistance to fuel oil	5.8.7		X	X	
	Cleated area	6.4.1		X	X	
	Thickness of cleated outsoles	6.4.2		X	X	
	Cleat height	6.4.3		X	X	
	Resistance to hot contact	6.4.4		*	*	HRO

NOTE The applicability of a requirement to a particular classification is indicated in this Table by the following:

X the requirement shall be met. In some cases the requirement relates only to particular materials within the classification — e.g. pH value of leather components. This does not mean that other materials are precluded from use.

O if the component part exists, the requirement shall be met.

The absence of X or O indicates that there is no requirement.

\* Means that if the property is claimed, the requirement given in the appropriate clause shall be met.



Table 2 — Basic requirements for insoles and/or insocks

Options			Component to be assessed	Requirements of EN ISO 20345: 2004 to fulfil					
				Thickness 5.7.1	pH <sup>a</sup> 5.7.2	Water absorption desorption 5.7.3	Abrasion 5.7.4.1	Chromium VI <sup>a</sup> 5.7.5	Abrasion 5.7.4.2
1	No insole or if present not fulfilling the requirements	Non removable insock	Insock	X	X	X		X	X
2		No insock	Insole	X	X	X	X	X	
		Seat sock present							
3	Insole present	Full insock, non removable	Insock and insole together	X		X			
			Insock		X		X	X	
4		Full insock, removable and water permeable <sup>b</sup>	Insole	X	X	X	X	X	
			Insock		X			X	X
5		Full insock, removable, not water permeable <sup>b</sup>	Insole	X	X	X	X	X	
			Insock		X	X		X	X

X the requirement shall be met.

NOTE : For removable insocks see 7.4.

<sup>a</sup> those requirements are only for leather

<sup>b</sup> a water permeable insock is one that, when tested in accordance with EN ISO 20344: 2004, 7.2, lets water through in 60 s or less

## 5.2 Design

Safety footwear with resistance to chain saw cutting shall only be of design C, D or E as described in Figure 3 of EN ISO 20345:2004.

The minimum height “f” of the protective area (see Figure 1) shall be in accordance with Table 3.

Table 3 - Minimum height of the protective area

Footwear size		Minimum height, / (mm)	
French	English	Design C	Designs D, E
36 and below	Up to 3 ½	172	195
37 and 38	4 to 5	175	195
39 and 40	5 ½ to 6 ½	182	195
41 and 42	7 to 8	188	195
43 and 44	8 ½ to 10	195	195
45 and above	10 ½ and above	195	195

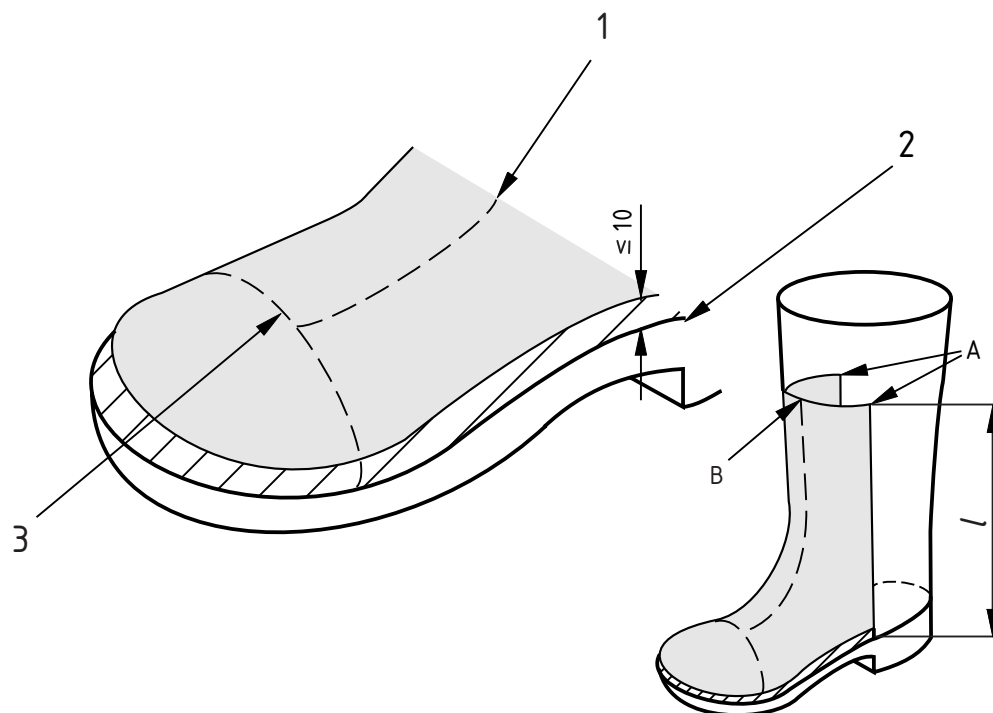
### 5.3 Construction

Safety footwear with resistance to chain saw cutting shall have a continuous protective area, as shown in Figure 1, comprising the vamp, tongue and toe area of the footwear. It includes:

- a) the safety toecap;
- b) the area immediately behind the toecap back edge bounded by two vertical lines at least 70 mm on either side of the footwear centre line, measured between point A and point B as shown in Figure 1, and a line parallel to the feather line at a maximum distance of 10 mm above the feather line and with a minimum height as given in Table 3.

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#### Key

- 1 Footwear centre line
- 2 Feather line
- 3 Toecap back edge
- 4 Protective area
- 5 Additional protective area for level 3 and level 4 footwear

**Figure 1 — Minimum protective area**

For level 3 and level 4 footwear (see 5.4), there shall be no gap between the protective area and the feather line.

There shall be no gap between the toecap and the protective material.

All chain saw protective material shall be permanently attached to the footwear. If different chain saw protective materials are used, they shall either be butted together or overlapped so that there are no surface gaps.

If the footwear is designed to provide protection over a larger area than that specified, all parts shall have the same protective quality.