



**SLOVENSKI STANDARD**  
**SIST EN 344:1996/A1:1998**

**01-april-1998**

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**Zahteve in preskusne metode za zaščitno, varovalno in delovno obutev za poklicno uporabo**

Requirements and test methods for safety, protective and occupational footwear for professional use

Anforderungen und Prüfverfahren an Sicherheits-, Schutz und Berufsschuhe für den gewerblichen Gebrauch

Exigences et méthodes d'essais des chaussures de sécurité, des chaussures de protection et des chaussures de travail à usage professionnel

<https://standards.iteh.ai/catalog/standards/sist/4c823a57-67f1-487a-846e-dbcde9822f4c/sist-en-344-1996-a1-1998>

**Ta slovenski standard je istoveten z: EN 344:1992/A1:1997**

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**ICS:**

13.340.50      Varovanje nog in stopal      Leg and foot protection

**SIST EN 344:1996/A1:1998**      en

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SIST EN 344:1996/A1:1998

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EUROPEAN STANDARD

EN 344:1992/A1

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 1997

ICS 13.340.10

Descriptors: personal protective equipment, accident prevention, work safety, footswear, boots, specifications, characteristics, tests

English version

**Requirements and test methods for safety,  
protective and occupational footwear for  
professional use**

Exigences et méthodes d'essais des chaussures  
de sécurité, des chaussures de protection et  
des chaussures de travail à usage professionnel

Anforderungen und Prüfverfahren an  
Sicherheits-, Schutz- und Berufsschuhe für den  
gewerblichen Gebrauch

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This amendment 1 modifies the European Standard EN 344:1992. This amendment was approved by CEN on 1997-01-19. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 Central Secretariat or to any CEN member.

The European Standards exist 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.

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

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Page 2

EN 344:1992/A1:1997

## Foreword

This Amendment EN 344:1992/A1:1997 to the EN 344:1992 has been prepared by Technical Committee CEN/TC 161 'Foot and leg protectors', the secretariat of which is held by BSI.

This Amendment to the European Standard EN 344:1992 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

The amendment is based upon the work of CEN/TC161/WG1 and WG2 and is intended to provide urgently needed modifications to particular requirements and test methods specified in EN 344:1992 in order to rectify minor deficiencies which the practical implementation of the standard has brought to light.

Where still appropriate, this amendment incorporates the corrections of the corrigendum issued April 1993.

As a consequence of the publication of EN 344-2 the standard EN 344 has been renumbered as EN 344-1 with the following title, Safety, protective and occupational footwear for professional use - Part 1: Requirements and test methods.

This amendment will be incorporated in EN 344:1992 on the occasion of its first revision.

This Amendment to the European Standard EN 344:1992 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).

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

**Revised text****Title page**

In top right-hand corner delete "EN 344" and substitute "EN 344-1".

Delete existing title and substitute

English title: "Safety, protective and occupational footwear for professional use - Part 1: Requirements and test methods"

French title: "Chaussures de sécurité, chaussures de protection et chaussures de travail à usage professionnel - Partie 1: Exigences et méthodes d'essai"

German title: "Sicherheits-, Schutz und Berufsschuhe für den gewerblichen Gebrauch - Teil 1: Anforderungen und Prüfverfahren"

In bottom right-hand corner delete "EN 344 : 1992" and substitute "EN 344-1 : 1992".

**Page numbering**

For all of the numbered pages, on the second line of the page number, delete "EN 344 : 1992" and substitute "EN 344-1 : 1992".

**Foreword**

In paragraph 4 delete "EN 345 : 1992, EN 346 : 1992 and EN 347 : 1992" and substitute "EN 345-1 : 1992, EN 346-1 : 1992 and EN 347-1 : 1992".

**Contents list**

4.5.1 Delete "Thickness" and substitute "Text deleted".

5.5 Delete the existing text and substitute the following.

"5.5 Determination of corrosion resistance

"5.5.1 Determination of corrosion resistance of metal toecaps or metal penetration resistant inserts in all-rubber footwear

"5.5.2 Determination of corrosion resistance of metal toecaps in footwear other than all-rubber footwear

"5.5.3 Determination of corrosion resistance of metal penetration resistant inserts in footwear other than all-rubber footwear"

5.19.2 Delete the existing text and substitute the following.

"5.19.2 Method for outsole materials which shrink or harden"

Add the following text after Annex B, "Annex C (normative) Flexing procedure"

## 1 Scope

In paragraph 2 delete "EN 345 : 1992, EN 346 :1992 and EN 347 : 1992" and substitute "EN 345-1 : 1992, EN 346-1 :1992 and EN 347-1 : 1992".

## 2 Normative references

Delete the following references:

- "EN 345 : 1992      Specification for safety footwear for professional use"  
 "EN 346 : 1992      Specification for protective footwear for professional use"  
 "EN 347 : 1992      Specification for occupational footwear for professional use"

and substitute the following:

- "EN 345-1 : 1992      Safety footwear for professional use - Part 1: Specification"  
 "EN 346-1 : 1992      Protective footwear for professional use - Part 1: Specification"  
 "EN 347-1 : 1992      Occupational footwear for professional use - Part 1: Specification"

Delete the following references: [SIST EN 344:1996/A1:1998](https://standards.iteh.ai/catalog/standards/sist/4c823a57-67f1-487a-846e-dbcde9822f4c/sist-en-344-1996-a1-1998)  
[standards.iteh.ai/catalog/standards/sist/4c823a57-67f1-487a-846e-dbcde9822f4c/sist-en-344-1996-a1-1998](https://standards.iteh.ai/catalog/standards/sist/4c823a57-67f1-487a-846e-dbcde9822f4c/sist-en-344-1996-a1-1998)

- "ISO 2286 : 1986      Rubber - or plastics-coated fabrics - Determination of roll characteristics"  
 "ISO 2589 : 1972      Leather - Physical testing - Measurement of thickness"  
 "ISO 4593 : 1979      Plastics - Film and sheeting - Determination of thickness by mechanical scanning"  
 "ISO 5084 : 1977      Textiles - Determination of thickness of woven and knitted fabrics (other than textile floor coverings)"

Add the following reference after ISO 34.

- "ISO 868 : 1985      Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)"

#### 4.1 Sampling and conditioning

In paragraph 2, add "unless otherwise stated" after "from the whole footwear".

In paragraph 4, delete "65 %  $\pm$  2 % r.h." and substitute "65 %  $\pm$  5 % r.h.".

#### Table 1 Minimum number of samples and test specimens or test pieces

In column 2 delete the reference 4.5.1 against the requirement "Thickness".

#### 4.3.1.2 Upper/outsole bond strength

Delete the existing text and substitute the following.

"When footwear, other than that with a rigid sole, is tested in accordance with the method described in 5.1, the bond strength shall be not less than 4,0 N/mm, unless there is tearing of the sole, in which case the bond strength shall be not less than 3,0 N/mm."

#### 4.3.2.5 Corrosion resistance of metal toecaps

Delete the existing text and substitute the following.

"When all-rubber footwear is tested and assessed in accordance with the method described in 5.5.1, the metal toecap shall exhibit no more than five areas of corrosion, none of which shall exceed 2,5 mm<sup>2</sup> in area.

When metal toecaps to be used in all other types of footwear are tested and assessed in accordance with the method described in 5.5.2, they shall exhibit no more than five areas of corrosion, none of which shall exceed 2,5 mm<sup>2</sup> in area."

#### 4.3.3.2.3 Corrosion resistance of metal penetration resistant inserts

Delete the existing text and substitute the following.

"When all rubber footwear is tested and assessed in accordance with the method described in 5.5.1, the metal penetration resistant insert shall exhibit no more than five areas of corrosion, none of which shall exceed 2,5 mm<sup>2</sup> in area.

When metal penetration resistant inserts to be used in all other types of footwear are tested in accordance with the method described in 5.5.3, they shall exhibit no more than five areas of corrosion, none of which shall exceed 2,5 mm<sup>2</sup> in area."

#### 4.4 Upper

Delete the existing NOTE 2 and substitute the following.

"NOTE 2 : The textile layer in all-rubber and all-polymeric footwear is a part of the upper and should not be removed before testing, except where otherwise indicated in the relevant test method."

#### Table 5 Minimum thickness of upper

In table 5, column 2, delete "ISO 4593 : 1979" and substitute "ISO 4648 : 1991\*".

#### Table 6 Minimum tear strength of upper

Add the following text as a second sentence to the footnote to table 6.

"For knitted and non woven materials, use the largest possible test piece obtainable from the footwear."

#### Table 7 : Tensile properties

Delete table 7 entirely and substitute the following new table 7.

SIST EN 344:1996/A1:1998  
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Type of material	Test method	Tensile property	Value
Leather split	ISO 3376 : 1976*	Tensile strength	15 N/mm <sup>2</sup> minimum
Rubber	Annex A of ISO 2023 : 1973	Breaking force	180 N minimum
Polymeric**	ISO 4643 : 1992	Modulus at 100 % elongation	1,3 N/mm <sup>2</sup> to 4,6 N/mm <sup>2</sup>
		Elongation at break	250 % minimum

\* Using the test piece  $l = 90$  mm,  $b_1 = 25$  mm  
\*\* Remove the textile layer before testing

#### 4.5 Lining

Add the following text to the NOTE.

"Where an upper is split at the fore-part to house the toecap or if an external piece of material is stitched to the upper to form a pocket to house the toecap, the material under the toecap acts as a lining and should be tested as such."



#### 4.5.1 Thickness

Delete this clause entirely and substitute "Text deleted".

#### Table 9 Minimum thickness of lining

Delete this table and substitute "Table 9 deleted".

#### 4.8.3 Tear strength

In paragraph 2, delete "joint" and substitute "waist".

#### 4.8.4 Abrasion resistance

In paragraph 1, delete the final sentence and substitute the following.

"Test pieces shall be taken from anywhere on the sole."

#### 4.8.7 Interlayer bond strength

Delete the existing text and substitute the following.

"When tested in accordance with the method described in 5.1, the bond strength between the outer or cleated layer and the adjacent layer shall be not less than 4,0 N/mm unless there is tearing of the sole, in which case the bond strength shall be not less than 3,0 N/mm."

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[bcde98224c/sist-en-344-1996-a1-1998](https://standards.iteh.ai/catalog/standards/sist/4c823a57-67f1-487a-846e-bcde98224c/sist-en-344-1996-a1-1998)

#### 4.8.8 Resistance to hot contact

Delete the first sentence and substitute the following.

"When tested in accordance with the method described in 5.18 at a temperature of 300 °C, rubber and polymeric outsoles shall not melt and shall not develop any cracks when bent around the mandrel."

#### 4.8.9 Resistance to fuel oil

In paragraph 2, delete the existing text and substitute the following.

"If, after testing in accordance with the method described in 5.19.1, the test piece shrinks by more than 0,5 % in volume or increases in hardness by more than 10 Shore A hardness units, a further test piece shall be taken and tested in accordance with the method described in 5.19.2. The cut growth shall be not greater than 6 mm before 150 000 flexure cycles."

#### 5.2.1 Preparation of the test piece

In paragraph 1, add the following text.

"Remove all foreign materials adhering to them."