SLOVENSKI STANDARD
SIST EN 344:1996

01-februar-1996

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 für 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 a usage professionnel

Ta slovenski standard je istoveten z: **EN 344:1992**

ICS:

13.340.50	Varovanje nog in stopal	Leg and foot protection

SIST EN 344:1996 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 344:1992

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Descriptors: Personal protective equipment, accident prevention, work safety, footwear, boots, specifications, characteristics, tests

English version

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This European Standard was approved by CEN on 1992-10-30. 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 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

Contents list

Foreword

This European Standard was prepared by Technical Committee CEN/TC 161 "Foot and leg protectors", of which the secretariat is held by BSI.

This European Standard has been prepared under a mandate given to CEN by the Commission of the European Communities and the European Trade Association, and supports essential requirements of the EC Directive(s).

Work on this standard was initiated by Technical Committee CEN/TC 161 at its inaugural meeting in April 1989 and was subsequently undertaken by Technical Committee CEN/TC 161/WG 1. A draft proposal was prepared and circulated for the CEN Enquiry in 1990. Following consideration of all the comments received, a revised draft was prepared and agreement for its submission to the formal vote was given in October 1991. The result of the formal vote was positive.

This European Standard relates directly to EN 345:1992, EN 346:1992 and EN 347:1992, which specify requirements for footwear for different areas of work.

Further requirements and test methods for safety, protective and occupational footwear are currently being developed by Technical Committee CEN/TC 161. Initially, these will be published separately, but eventually it is intended that they should be incorporated in one standard.

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 May 1993, and conflicting national standards shall be withdrawn at the latest by May 1993.

The Standard was approved and in accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

1 Scope

This European Standard specifies requirements and, where appropriate, test methods to establish conformity with these requirements for footwear intended to protect the wearer's feet and legs against foreseeable hazards in a variety of working sectors.

This standard can be used only in conjunction with EN 345 : 1992, EN 346 : 1992 or EN 347 : 1992, which give requirements for footwear relating to specific levels of risk.

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.

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
ISO 34 : 1979	Rubber, vulcanized - Determination of tear strength (trouser, angle and crescent test pieces)
ISO 1817 : 1985	Rubber, vulcanized - Determination of the effect of liquids
ISO 2023 : 1973	Lined industrial rubber footwear
ISO 2286 : 1986	Rubber - or plastics-coated fabrics - Determination of roll characteristics
ISO 2589 : 1972	Leather - Physical testing - Measurement of thickness
ISO 3290 : 1975	Rolling bearings - Bearing parts - Balls for rolling bearings
ISO 3376 : 1976	Leather - Determination of tensile strength and elongation
ISO 3377 : 1975	Leather - Determination of tearing load
ISO 4045 : 1977	Leather - Determination of pH
ISO 4593 : 1979	Plastics - Film and sheeting - Determination of thickness by mechanical scanning
ISO 4643 : 1992	Moulded plastics footwear - Lined or unlined poly(vinyl chloride) boots for general industrial use - Specification
ISO 4648 : 1991	Rubber, vulcanized or thermoplastic - Determination of dimensions of test pieces and products for test purposes

ISO 4649 : 1985 Rubber - Determination of abrasion resistance using a rotating cylindrical drum device

ISO 4674 : 1977 Fabrics coated with rubber or plastics - Determination of tear resistance

ISO 5084 : 1977 Textiles - Determination of thickness of woven and knitted fabrics (other than textile floor coverings)

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

3 Definitions

NOTE: The component parts of footwear are illustrated in figures 1 and 2.

For the purposes of this standard, the following definitions apply.

3.1 safety footwear for professional use: Footwear incorporating protective features to protect the wearer from injuries which could arise through accidents in the working sectors for which the footwear was designed, fitted with toecaps designed to give protection against impact when tested at an energy level of 200 J.

3.2 protective footwear for professional use: Footwear incorporating protective features to protect the wearer from injuries which could arise through accidents in the working sectors for which the footwear was designed, fitted with toecaps designed to give protection against impact when tested at an energy level of 100 J.

3.3 occupational footwear for professional use: Footwear incorporating protective features to protect the wearer from injuries which could arise through accidents in the working sectors for which the footwear was designed.

3.4 leather: This term covers

full grain leather: Hide or skin tanned to be imputrescible with its original fibrous structure more or less intact and still possessing the full grain layer.

corrected grain leather: Hide or skin tanned to be imputrescible with its original fibrous structure more or less intact, but which has been subjected to mechanical buffing to modify its grain structure.

leather split: Flesh or middle part of a skin or hide tanned to be imputrescible with its original fibrous structure more or less intact and split or shaved to eliminate completely the grain layer.

3.5 rubber: Vulcanized elastomers.

3.6 polymeric materials: Materials made of polyurethane, polyvinylchloride or thermoplastic rubber.

3.7 height of the upper: Vertical distance between the top surface of the extreme rear edge of the insole and the highest point of the back of the upper.

3.8 insole: Non-removable bottom inside component of the footwear adjacent to the foot.

3.9 lining: Inside layer of the upper which is adjacent to the foot.

3.10 fuel oil: Aliphatic hydrocarbon constituent of petroleum.

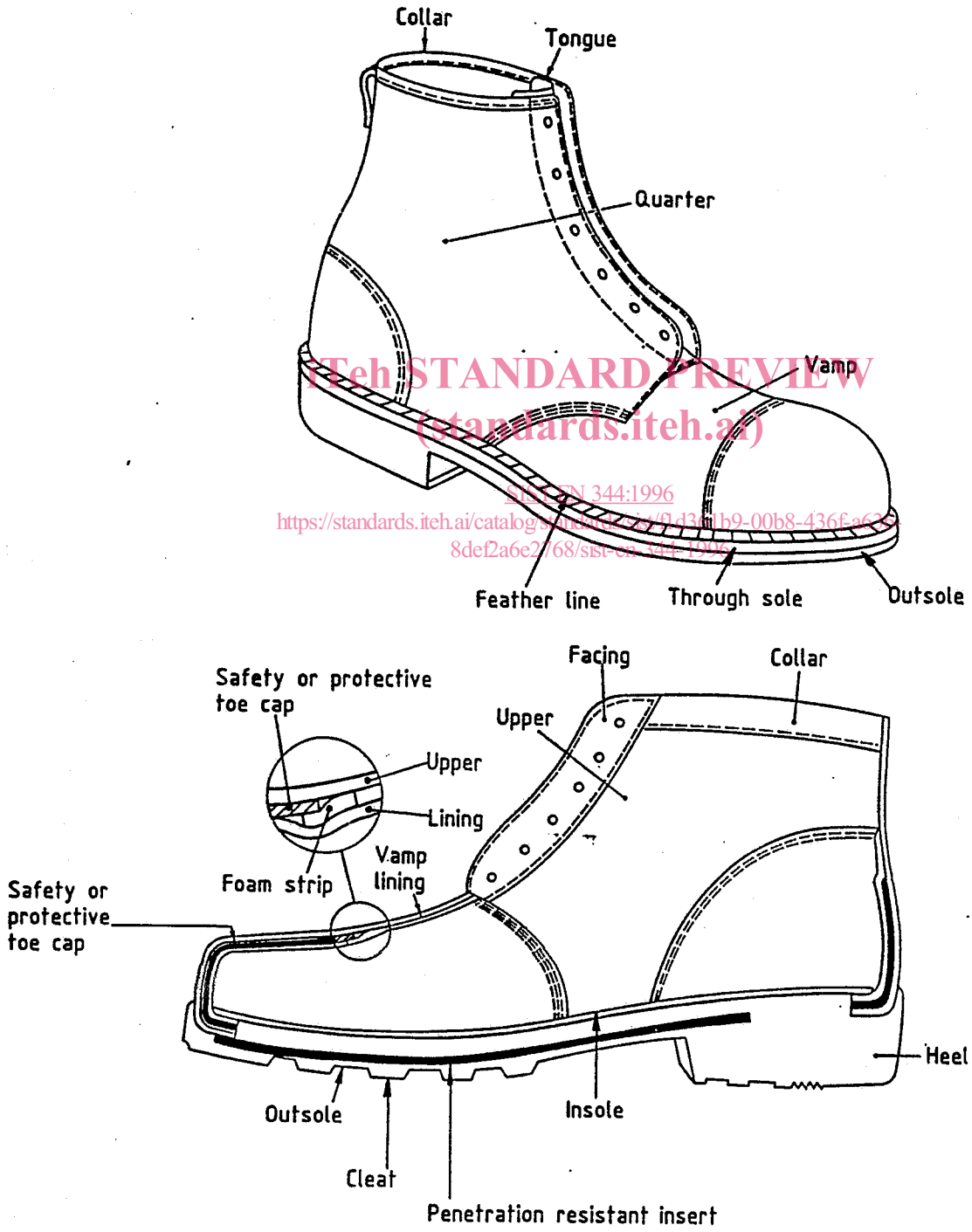

Figure 1: Parts of footwear

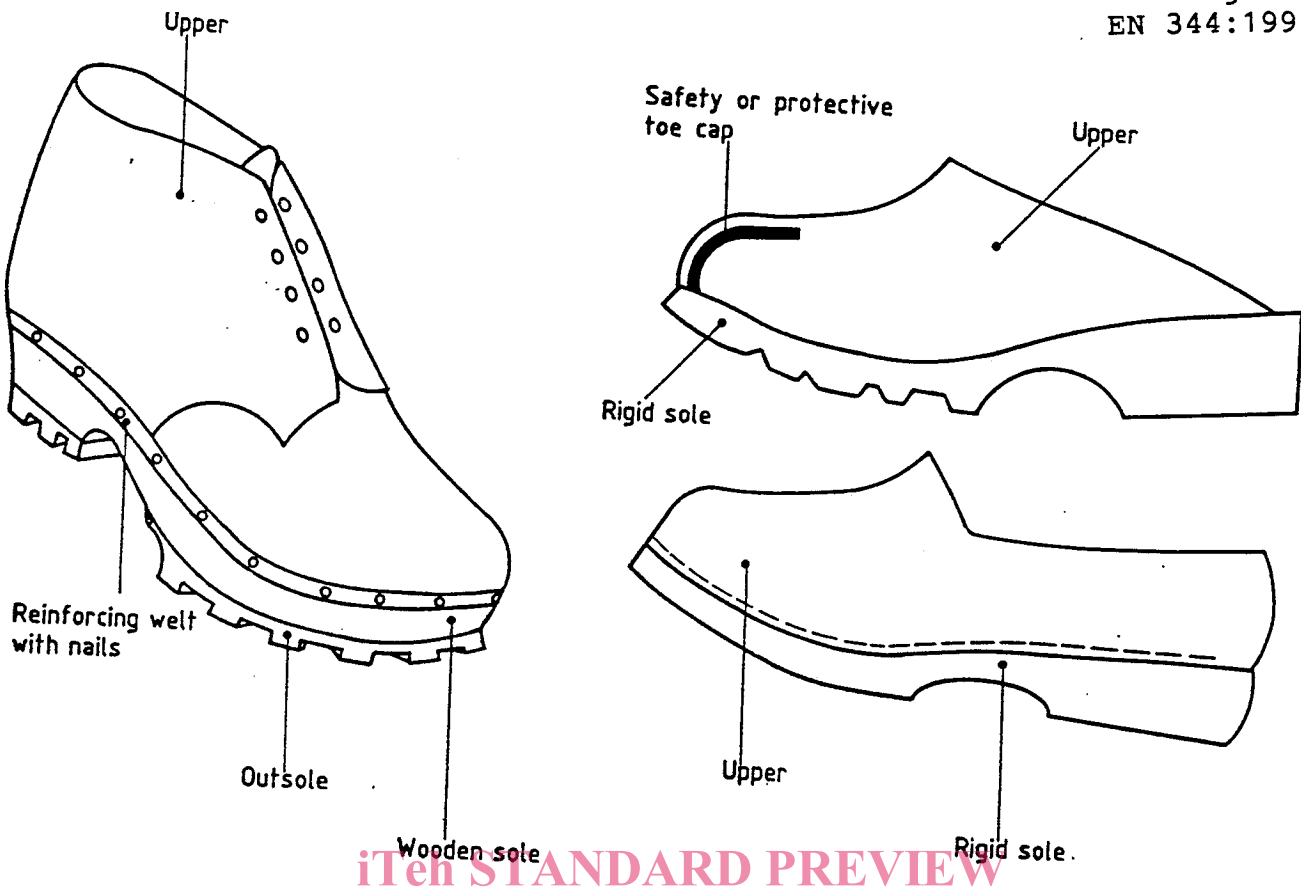

Figure 1 : Parts of footwear (continued)

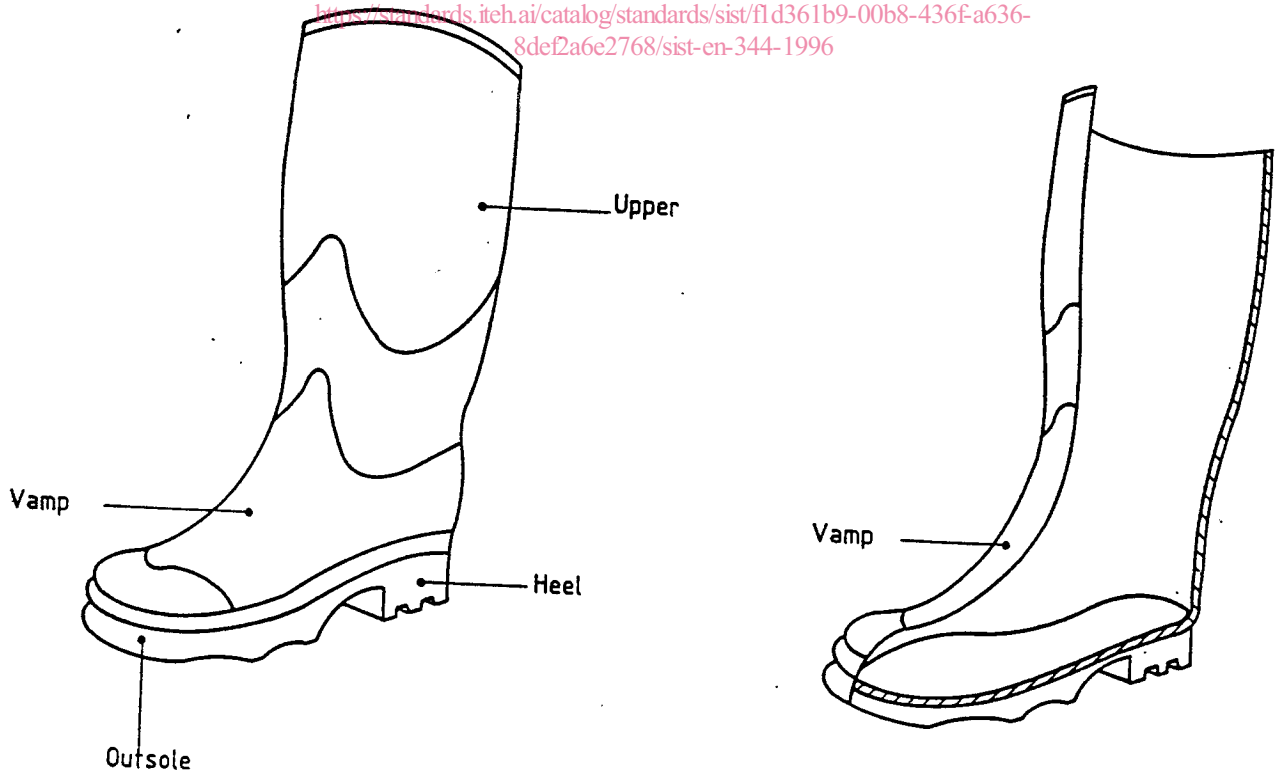

Figure 2: Parts of all-rubber (i.e. vulcanized) or all polymeric (i.e. entirely moulded) footwear

4 Requirements

4.1 Sampling and conditioning

The minimum number of samples, i.e. separate items of footwear, to be tested in order to check compliance with the requirements specified in clause 4, together with the minimum number of test pieces taken from each sample, shall be as given in table 1.

Wherever possible, test pieces shall be taken from the whole footwear.

> NOTE: If it is not possible to obtain a large enough test piece from the footwear, then a sample of the material from which the component has been manufactured may be used instead and this should be noted in the test report.

Where samples are required from each of three sizes, these shall comprise the largest, smallest and a middle size of the footwear under test.

All test pieces shall be conditioned in a standard atmosphere of 20 °C ± 2 °C and 65 % ± 2 % r.h. for a minimum of 48 h before testing, unless otherwise stated in the test method.

The maximum time which shall elapse between removal from the conditioning atmosphere and the start of testing shall be not greater than 10 min, unless otherwise stated in the test method.

Each test piece shall individually satisfy the specified requirement, unless otherwise stated in the test method.

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

Requirement	Clause reference	Number of samples	Number of test pieces from each sample
Upper/outsole and sole interlayer bond strength	4.3.1.2 4.8.7	1 from each of 3 sizes	1
Internal toecap length	4.3.2.2	1 pair from each of 3 sizes	1 pair
Impact resistance	4.3.2.3.1 4.3.2.3.2	1 pair from each of 3 sizes	1 pair
Compression resistance	4.3.2.4.1 4.3.2.4.2	1 pair from each of 3 sizes	1 pair
Corrosion resistance of metal toecaps or metal penetration resistant inserts	4.3.2.5 4.3.3.2.3	2	1
Penetration resistance	4.3.3.1	1 pair from each of 3 sizes	1 pair
Dimensions of penetration resistant inserts	4.3.3.2.2	1 pair from each of 3 sizes	1 pair
Electrical resistance	4.3.4	1 pair from each of 3 sizes	1 pair
Insulation against heat	4.3.5.1	2	1
Insulation against cold	4.3.5.2	2	1
Energy absorption of seat region	4.3.6	1 pair from each of 3 sizes	1 pair
Leakproofness	4.3.7	2	1
Thickness	4.4.1 4.5.1	1 from each of 3 sizes	3