SLOVENSKI STANDARD
SIST EN 50321:2000

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Elektroizolacijska obutev za delo na nizkonapetostnih električnih inštalacijah

Electrically insulating footwear for working on low voltage installations

Elektrisch isolierende Schuhe zum Arbeiten in Niederspannungsanlagen

Chaussures électriquement isolantes pour travaux sur installations à basse tension

Ta slovenski standard je istoveten z: **EN 50321:1999**

ICS:

13.260	Varstvo pred električnim udarom. Delo pod napetostjo	Protection against electric shock. Live working
13.340.50	Varovanje nog in stopal	Leg and foot protection

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EUROPEAN STANDARD

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English version

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This European Standard was approved by CENELEC on 1999-10-01. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

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

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Foreword

This European Standard has been prepared by the Technical Committee CENELEC TC 78, Equipment and tools for live working.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50321 on 1999-10-01.

This European Standard intends to cover the protection of personnel working on or in the vicinity of electrical installations, by adopting homogenous electrical requirements such as those defined for other personnel protective equipment e.g. insulating gloves. It also intends to be complementary to European Standards produced by CEN/TC 161.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2000-10-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2002-10-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given only for information.
In this standard, annexes A, B and C are normative and annex D is informative.

1 Scope

This standard is applicable to electrically insulating footwear used for working live or close to live parts on installations not exceeding 1 000 V a.c.

This footwear, when used in conjunction with other electrically insulating protective equipment such as gloves or blankets, prevents dangerous current from passing through persons via their feet.

This standard applies to designs A low shoe, B ankle boot, C half-knee boot, and D knee-height boot, as shown in EN 344.

Antistatic and conductive footwear are excluded from the scope of this standard.

NOTE: Extension of this standard to overshoes is under consideration. Electrical requirements of this standard may be applied to overshoes but further considerations must be given to non-electrical requirements.

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 344	1992	Requirements and test methods for safety, protective and occupational footwear for professional use
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
EN 60060-2 + A11	1994 1998	High-voltage test techniques - Part 2: Measuring systems (IEC 60060-2:1994)
EN 60903 + A11	1992 1997	Specification for gloves and mitts of insulating material for live working (IEC 60903:1988, mod.)
HD 437 S1	1984	Standard conditions for use prior to and during the testing of solid electrical insulating materials (IEC 60212:1971)
HD 588.1 S1	1991	High-voltage test techniques - Part 1: General definitions and test requirements (IEC 60060-1:1989 + corrigendum March 1990)
IEC 60050-151	1978	International Electrotechnical Vocabulary - Electrical and magnetic devices
IEC 60410	1973	Sampling plans and procedures for inspection by attributes
IEC 61318	1994	Live working - Guidelines for quality assurance plans

3 Definitions

3.1
electrically insulating footwear
denotes footwear which protects the wearer against electrical shocks by preventing the passage of dangerous current through the body via the feet

3.2
type test
a test performed on one or more devices made to a certain design to show that the design meets certain specifications [IEV 151-04-15]

3.3
routine test
a test to which each device is subjected during or after manufacture to ascertain whether it complies with certain criteria [IEV 151-04-16]

3.4
sampling test
a test performed on a number of devices taken at random from a batch
[IEV 151-04-17]

3.5
acceptance test
a contractual test to prove the customer that the device meets certain conditions of its specification [IEV 151-04-20]

3.6
proof test voltage
a specified value of voltage that is applied to a device, item or component for the time defined under specified conditions to assure that the electrical strength of the insulation is above a specified value

3.7
withstand test voltage
a specified value of voltage that a device, item or component must withstand without flashover, disruptive discharge, puncture or other electric failure when that value of voltage is applied under specified conditions.

4 Classification

Footwear shall be classified by electrical classes, according to their use on or near electrical installations of a defined nominal voltage, as follows :

Electrical class 00, for installations with nominal voltage up to 500 V a.c. and 750 V d.c.

Electrical class 0, for installations with nominal voltage up to 1 000 V a.c. and 1 500 V d.c.

5 Requirements

5.1 Non-electrical requirements

5.1.1 General

The requirements which are determined in EN 345, EN 346 and EN 347 are applicable.

5.1.2 Height of upper

The design of insulating footwear shall be A, B, C or D according to EN 344. In addition to the requirements given in Table 2 of EN 344, the height of the upper part of design A, denoted as X, shall be a minimum of 65 mm, measured as indicated in Figure 1.

5.2 Electrical requirements

Insulating footwear shall pass a proof voltage test and a withstand voltage test according to its classification.

5.3 Marking

5.3.1 The additional marking to those required by EN 345, EN 346 and EN 347 shall be the following (see Figure 2) :

- symbol (double triangle);
- class;
- serial or batch number;
- month and year of manufacture.

In addition each unit of footwear shall have a strip or space to note the date of first use, the date of examination or the date of each periodic inspection. Dimensions are given in Figure 2.

5.3.2 The marking shall be durable, clearly legible on the outside of the footwear and shall not impair its quality.

5.3.3 If a colour code is used, the symbol (double triangle) shall correspond to the following :

Class 00 : beige

Class 0 : red

5.3.4 Any additional marking shall be subject to agreement between the manufacturer and the customer.

5.4 Packaging

The type of packaging suitable for transport shall be defined by the manufacturer.

The packaging of each pair or of each group of pairs shall have sufficient strength to properly protect the footwear from damage.

The outside of packaging shall be marked with the name of the manufacturer or supplier, classification, size and design.

At the request of the customer or according to national regulations, information contained in annex B and instructions listed in 5.5 shall be included in the package.

5.5 Instructions for use

The following information shall be given (see annex B):

- name and full address of the manufacturer and/or his authorised representative;
- designation of the product type, commercial name or code;
- number of this European Standard (EN...);
- explanation of the marking.

6 Tests

6.1 General

Tests are type, routine, and sampling tests.

6.2 Non-electrical tests

6.2.1 General

Tests included in EN 344 shall be carried out according to the requirements of EN 345, EN 346 and EN 347, depending upon the use of the product and after agreement between the manufacturer and the customer.

6.2.2 Visual inspection and dimensions

The compliance with the requirements of 5.1.2 shall be checked.

6.3 Electrical tests

6.3.1 General

Electrical type tests shall be performed in a room where the temperature is (23 ± 2) °C and with (50 ± 5) % relative humidity (see HD 437 S1, standard atmosphere B).

Electrical routine tests shall be performed in a room where the temperature is 15 °C to 35 °C and the relative humidity is between 45 % and 75 % (see HD 437 S1, standard ambient).

Electrical tests shall be performed on whole footwear which fulfil the declared non-electrical requirements. For type tests two pairs of footwear shall be used, no failure shall occur. One unit is one piece of footwear. Routine tests shall be performed on each unit. All units which fail any test shall be destroyed.

Test arrangements, power sources and procedures shall be in accordance with HD 588.1 S1/EN 60060-2.

After a type or sampling test, footwear shall not be used. These tests are considered as destructive. Footwear used for type or sampling tests shall be destroyed after the completion of the tests.