



SLOVENSKI STANDARD
SIST EN ISO 19954:2004

01-januar-2004

Footwear - Test methods for whole shoe - Washability in a domestic washing machine (ISO 19954:2003)

Footwear - Test methods for whole shoe - Washability in a domestic washing machine (ISO 19954:2003)

Schuhe - Prüfverfahren für fertige Schuhe - Prüfverfahren in einer Haushaltswaschmaschine (ISO 19954:2003)

Chaussures - Méthodes d'essai s'appliquant à la chaussure entière - Lavabilité au lavage domestique (ISO 19954:2003)

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Ta slovenski standard je istoveten z: EN ISO 19954:2003

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61.060

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Footwear

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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 19954

October 2003

ICS 61.060

English version

**Footwear - Test methods for whole shoe - Washability in a
domestic washing machine (ISO 19954:2003)**

Chaussures - Méthodes d'essai s'appliquant à la chaussure
entière - Lavabilité au lavage domestique (ISO 19954:2003)

Schuhe - Prüfverfahren für fertige Schuhe - Prüfverfahren
in einer Haushaltswaschmaschine (ISO 19954:2003)

This European Standard was approved by CEN on 16 May 2003.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN ISO 19954:2003) has been prepared by Technical Committee CEN/TC 309 "Footwear", the secretariat of which is held by AENOR, in collaboration with Technical Committee ISO/TC 216 "Footwear".

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 January 2004 and conflicting national standards shall be withdrawn at the latest by January 2004.

Annex ZA 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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EN ISO 19954:2003 (E)

1 Scope

This European Standard specifies a test method for the evaluation of the behaviour of footwear when subjected to domestic washing. The evaluation is based upon the modification of some characteristics measured before and after washing.

This European Standard specifies a method of domestic washing adapted to all types of footwear.

2 Normative references

This European Standard incorporates by dated or undated references, 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 12222, *Footwear - Standard atmospheres for conditioning and testing of footwear and components for footwear.*

EN ISO 6330, *Textiles - Domestic washing and drying procedures for textile testing (ISO 6330:2000).*

EN ISO 17708, *Footwear - Test methods for whole shoe - Upper sole adhesion (ISO 17708:2003).*

ISO 105-A02, *Textiles - Tests for colour fastness - Part A02: Grey scale for assessing change in colour.*

ISO 105-A03, *Textiles - Tests for colour fastness - Part A03: Grey scale for assessing staining.*

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3 Apparatus and material to be used

3.1 Washing machine

A washing machine complying with 3.1.1 to 3.1.4. Other equipment can be used provided that it gives identical results to the machine described in this subclause.

3.1.1 General

The washing machine used should correspond to machine type A1 as described in EN ISO 6330.

3.1.2 Washing conditions

The washing cycle should comply with the following:

- volume of water of 18 l \pm 1 l;
- temperature within the range of 30 °C to 35 °C;
- a washing time of 30 min \pm 2 min;
- rotation speed of the drum of 5,4 rad/s \pm 0,5 rad/s (alternative movement)¹⁾;
- 4 g/l of detergent specified in 3.5.

3.1.3 Rinsing conditions

The rinsing cycle should comply with the following:

- volume of water of 15 l \pm 1 l;
- rinsing time of 4 min \pm 1 min.

3.1.4 Wringing/Emptying conditions

3.1.4.1 Initial wringing

This cycle should comply with the following:

- 120 s \pm 30 s at a rotation speed of 5,7 rad/s \pm 0,5 rad/s.

3.1.4.2 Final wringing

This cycle should comply with the following:

- 6 min \pm 1 min at a rotation speed of 49,5 rad/s \pm 2,6 rad/s.

3.2 Textile component

It shall be a white, 100% monofibre cotton textile of 125 g/m² \pm 5 g/m² cut into rectangles of (50 \pm 2) cm x (50 \pm 2) cm.

The textile component shall be composed of 10 such rectangles.

The textile component is used in order to simulate normal washing conditions and to minimise abrasion damage of the footwear against the drum.

3.3 Standard grey scale

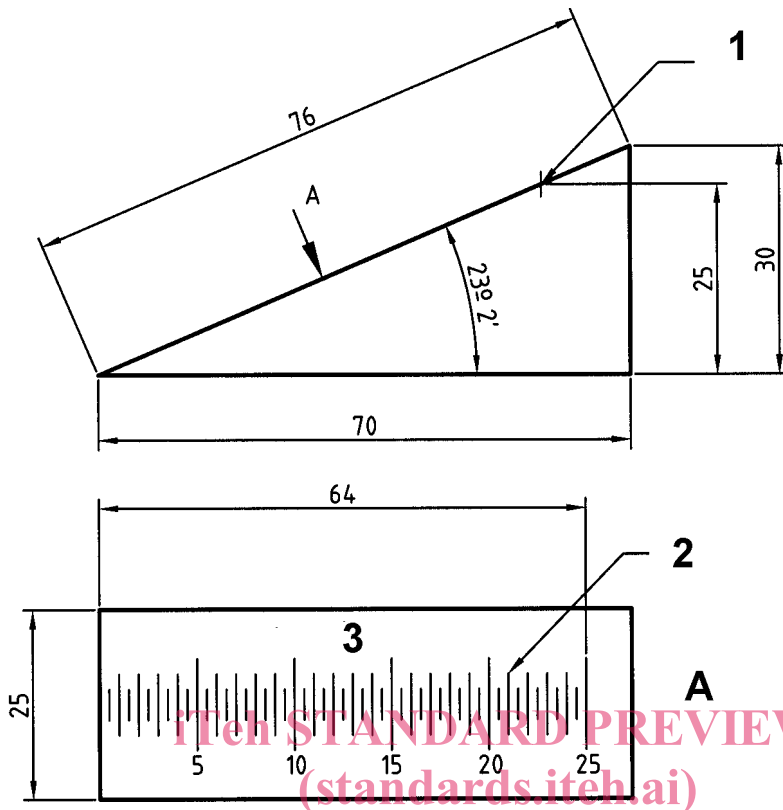
The grey scales for the evaluation of colour change and colour transfer (see clause 5) shall comply with ISO 105-A02 and ISO 105-A03, respectively.

3.4 Toe spring gauge

The toe spring gauge shall be as shown in Figure 1.

¹⁾ 1 rad \equiv 0,16 revolution.

Dimensions in millimetres

**Key**

- 1: Scale reads 25mm
 2: Engrave as shown
 3: Toe spring in mm
 A: View on A

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Figure 1 — Toe spring gauge**3.5 Detergent**

The reference detergent ECE (see EN ISO 6330) shall be used.

NOTE Information on the availability of suitable detergent can be obtained from CEN/TC 309 Secretariat.

3.6 Water

Tap water can be used, under the following conditions:

- temperature of $20\text{ °C} \pm 4\text{ °C}$;
- pH of (7 ± 1) .

4 Sampling and conditioning

4.1 The sample shall be, at least, two pairs of shoes.

Each complete item of footwear shall be considered as a test piece and at least two test pieces shall be tested.

4.2 The sample shall be conditioned according to EN 12222 for 24 h prior to the test.

5 Test method

5.1 Principle

The test pieces are examined visually. Then one of the test pieces is stored in a standard atmosphere and the other test piece, together with a reference sample of a specified textile, are washed under suitable conditions of temperature, alkalinity and detergent, so that the washing cycle is short. Then they are rinsed and dried.

After complete washing cycle, the test piece is examined in order to determine:

- upper to sole adhesion,
- any colour changes,
- miscellaneous damage, such as tearing, loss of eyelets, etc.,
- any dimensional changes which may have taken place.

5.2 Procedure

5.2.1 Initial assessment

The operator shall ensure that the visual appearance of the test pieces, for the left and right feet of the pairs, is identical.

The test piece shall be characterised by recording all of the detail (colour of material, decoration, washing instruction, etc.).

Place the test piece on a horizontal flat surface and without applying any pressure to any part of said test piece, measure the toe spring as shown in Figure 2, using the toe spring gauge (see 3.4), and record the result, in mm.



Figure 2 — Measurement of the toe spring

Finally, measure the internal length and width of the test pieces according to 5.2.3.2, and record the results, in mm, as L_1 and B_1 , respectively.

5.2.2 Complete washing cycle

5.2.2.1 General

After initial assessment, the test piece corresponding to the right feet is stored in a standard atmosphere (see EN 12222), and the test piece corresponding to the left feet is submitted to the complete washing cycle.

The complete washing cycle consists of three washings and three dryings.