



SLOVENSKI STANDARD
SIST EN ISO 17700:2005

01-december-2005

Footwear - Test methods for uppers, linings and insoles - Colour fastness to rubbing (ISO 17700:2004)

Footwear - Test methods for uppers, linings and insoles - Colour fastness to rubbing (ISO 17700:2004)

Schule - Prüfverfahren für Obermaterialien, Futter und Decksohlen - Farbechtheit bei Abrieb (ISO 17700:2004)

Chaussures - Méthodes d'essai des tiges, des doublures et des garnitures intérieures - Stabilité de la couleur au frottement (ISO 17700:2004)

Ta slovenski standard je istoveten z: EN ISO 17700:2005

ICS:

61.060 Obuvala Footwear

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 17700

September 2005

ICS 61.060

Supersedes EN 13516:2001

English Version

**Footwear - Test methods for uppers, linings and insocks -
Colour fastness to rubbing (ISO 17700:2004)**

Chaussures - Méthodes d'essai des tiges, des doublures et
des garnitures intérieures - Stabilité de la couleur au
frottement (ISO 17700:2004)

Schule - Prüfverfahren für Obermaterialien, Futter und
Decksohlen - Farbechtheit bei Abrieb (ISO 17700:2004)

This European Standard was approved by CEN on 26 August 2005.

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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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN ISO 17700:2005 (E)**Foreword**

The text of ISO 17700:2004 has been prepared by Technical Committee ISO/TC 216 "Footwear" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 17700:2005 by Technical Committee CEN/TC 309 "Footwear", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by March 2006, and conflicting national standards shall be withdrawn at the latest by March 2006.

This document supersedes EN 13516:2001.

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.

Endorsement notice

The text of ISO 17700:2004 has been approved by CEN as EN ISO 17700:2005 without any modifications.

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INTERNATIONAL
STANDARD

ISO
17700

First edition
2004-10-15

**Footwear — Test methods for uppers,
linings and insoles — Colour fastness to
rubbing**

*Chaussures — Méthodes d'essai des tiges, des doublures et des
garnitures intérieures — Stabilité de la couleur au frottement*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17700 was prepared by the European Committee for Standardization as EN 13516:2001. This International Standard includes corrigendum EN 13516:2001/AC:2003 and was adopted under a special "fast-track procedure" by technical committee ISO/TC 216, Footwear in parallel with its approval by the ISO member bodies.

Throughout the text of this document, read "...this European Standard..." to mean "...this International Standard...".

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EN 13516:2001 (E)

1 Scope

1.1 This standard specifies two test methods (method A and method B) for assessing the degree of damage (marring) and transfer of a material's surface colour during mild dry or wet abrasion. The methods are applicable to all footwear uppers, linings and insocks irrespective of the material, in order to assess suitability for end use.

1.2 This standard also specifies a method (method C) for determining the likelihood of colour bleeding from materials and components such as sewing threads and shoe laces due to the action of water and artificial perspiration solutions, in order to assess suitability for end use.

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 12222, *Footwear - Standard atmospheres for conditioning and testing of footwear and components for footwear.*

EN ISO 105-A01, *Textiles - Tests for colour fastness - Part A01: General principles of testing (ISO 105-A01:1994).*

EN 20105-A02, *Textiles - Tests for colour fastness - Part A02: Grey scale for assessing change in colour (ISO 105-A02:1993).*

EN 20105-A03, *Textiles - Tests for colour fastness - Part A03: Grey scale for assessing staining (ISO 105-A03:1993).*

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987).*

ISO 105-F10, *Textiles - Tests for colour fastness - Part F10: Specification for adjacent fabric: Multifibre.*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

3.1

colour fastness to rubbing

resistance of a material to damage (marring) and transfer of the materials surface colour during mild dry or wet abrasion

3.2

perspiration fastness

resistance of a material to colour bleed when exposed to an artificial perspiration solution

3.3

thick leather

leather with a thickness greater than 2 mm

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4 Apparatus and material

The following apparatus and material shall be used:

4.1 Method A

4.1.1 Test machine with the following:

4.1.1.1 Flat horizontal metal platform of minimum dimensions 80 mm × 25 mm.

4.1.1.2 Means of moving the platform in a direction parallel to its 80 mm edges through distance of 35 mm ± 2 mm and back again at a rate of 40 cycles/min ± 2 cycles/min.

4.1.1.3 Pair of clamps positioned at the ends of the platform at 90° to the 80 mm edges and which are designed to clamp the test specimen against the platform. The clamp faces shall be a minimum distance of 80 mm apart.

4.1.1.4 Means of moving the clamps apart so that the test specimen is extended linearly by an amount adjustable up to 20 %.

4.1.1.5 Rubbing finger with a flat horizontal lower surface capable of holding a square felt pad (4.1.2). For machines with a platform wider than 25 mm the relative position of the rubbing finger shall be adjustable across the width of the platform.

4.1.1.6 Means of holding a square felt pad (4.1.2) on the lower surface of the finger.

4.1.1.7 Means of applying a downward force of 4,9 N ± 0,1 N and 9,8 N ± 0,2 N to the rubbing finger.

4.1.1.8 Means of counting the number of cycles traversed by the platform.

4.1.2 Square pads of scoured pure wool felt with the following requirements:

4.1.2.1 Sides of length 15 mm ± 1 mm.

4.1.2.2 Mass per unit area of 1750 g/m² ± 100 g/m² and thickness 5,5 mm ± 0,5 mm when measured using a dial gauge exerting a downward pressure of 49 kPa ± 5 kPa on a measuring foot diameter of 10 mm ± 1 mm.

4.1.2.3 The pH of an aqueous extract, made by shaking 5 g of ground felt in 100 ml of distilled or deionized water complying with EN ISO 3696 in a polyethylene bottle and leaving for 2 h, between 6 and 7.

4.1.3 Grey scales for assessing change in colour and staining with half step ratings conforming to EN 20105-A02 and EN 20105-A03

4.1.4 Assessment cabinet with artificial lighting as specified in EN ISO 105-A01. Alternatively, the assessment can be carried out in daylight from the north, when the test is carried out in the northern hemisphere, or daylight from the south when testing in the southern hemisphere.

4.1.5 Distilled or de-mineralized water complying with grade 3 of EN ISO 3696.

4.1.6 Synthetic perspiration solution containing per litre of solution;

- Sodium chloride, 5,0 g per litre of solution.

- Ammonia solution, density 0,880 g/cm³, 6,0 cm³.

4.1.7 White spirit, general purpose reagent grade.

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4.2 Method B

4.2.1 Test machine with the following:

- 4.2.1.1 Rigid horizontal platform (preferably metal) capable of clamping the test specimen.
- 4.2.1.2 Vertical rotating spindle capable of holding the circular felt pad.
- 4.2.1.3 Means of rotating the felt pad at a speed of $15,6 \text{ rad/s} \pm 0,5 \text{ rad/s}^1$.
- 4.2.1.4 Means of loading the rotating felt pad with a force of either $24,5 \text{ N} \pm 0,5 \text{ N}$ and $7,1 \text{ N} \pm 0,2 \text{ N}$.
- 4.2.1.5 Means of counting the number of revolutions of the felt pad.

4.2.2 Circular pads of scoured pure wool felt with central holes, with the following requirements:

- a) Outside diameter $25 \text{ mm} \pm 1 \text{ mm}$, bore diameter $3 \text{ mm} \pm 0,5 \text{ mm}$.
- b) Thickness, to be measured by one of the following methods:

Thickness	Downward pressure/presser foot size	Specimen
$6,5 \pm 0,5$	$49 \text{ kPa} \pm 5 \text{ kPa}/10 \text{ mm} \pm 1 \text{ mm}$	Cut pads or uncut sheet material
$5,0 \pm 0,5$	$2,0 \text{ kPa} \pm 0,2 \text{ kPa}/19 \text{ mm} \pm 10 \text{ mm}$	Cut pads

- c) Density $190 \text{ kg/m}^3 \pm 20 \text{ kg/m}^3$.

4.2.3 Grey scales for assessing the change in colour and degree of staining complying with EN 20105-A02 and EN 20105-A03 respectively.

4.2.4 Metal plate approximately $75 \text{ mm} \times 65 \text{ mm}$ and thickness 5 mm with a hole diameter 25 mm through its centre for use in the wetting from the back with organic solvents test described in 6.2.2.6.

4.2.5 Polished aluminium disc (diameter approximately 50 mm and thickness approximately 12 mm) to help cool the test specimen in dry rub tests.

4.2.6 Balance, capable of weighing masses up to 5 g to an accuracy of 10 mg .

4.2.7 Assessment cabinet with artificial lighting as specified in EN ISO 105-A01. Alternatively, the assessment can be carried out in daylight from the north, when the test is carried out in the northern hemisphere, or daylight from the south when testing in the southern hemisphere.

4.2.8 Distilled or deionised water complying with grade 3 of EN ISO 3696 for the wet rub test described in 6.2.2.3.

4.2.9 Synthetic perspiration solution, for the perspiration rub test described in 6.2.2.4, consisting of:

- Sodium chloride, 5 g per litre of solution.
- Ammonia solution, density $0,880 \text{ g/cm}^3$, $6,0 \text{ cm}^3$.

4.2.10 White spirit for the spirit rub test described in 6.2.2.5.

4.2.11 Organic solvents (as used for solvent activated stiffeners) for the wetting from the back with organic solvents test described in 6.2.2.6.

1) $1 \text{ rad} \approx 0,16 \text{ rev}$.