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Footwear — Test methods for upper components and insocks — Colour fastness to rubbing and bleeding

Chaussures — Méthodes d'essai des composants de la tige et des premières de propreté — Solidité des coloris au frottement et à l'exsudation

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Foreword

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This document was prepared by Technical Committee ISO/TC 216, *Footwear*.

This second edition cancels and replaces the first edition (ISO 17700:2004), which has been technically revised. The main changes compared with the previous edition are as follows:

— a new method (method C) to perform the colour fastness to rubbing has been introduced;

— in method D, the possibility to perform the colour fastness to bleeding in shoe laces and yarns has been introduced.

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Footwear — Test methods for upper components and insocks — Colour fastness to rubbing and bleeding

1 Scope

This document specifies three test methods (method A, method B and method C) for assessing the degree of transfer of a material's surface colour during dry or wet rubbing and a method (method D) for determining the likelihood of colour bleeding.

The methods are applicable to all footwear uppers, linings and insocks, irrespective of the material. Method D is also applicable to sewing threads and shoelaces.

The methods are:

— method A: to-and-fro square rubbing finger fastness testing machine;

— method B: rotative rub fastness testing machine;

— method C: to-and-fro circular rubbing finger fastness testing machine;

— method D: colour fastness to bleeding.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 105-A01, *Textiles — Tests for colour fastness — Part A01: General principles of testing*

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*

ISO 105-F09, *Textiles — Tests for colour fastness — Part F09: Specification for cotton rubbing cloth*

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

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 4045, *Leather — Chemical tests — Determination of pH and difference figure*

ISO 18454, *Footwear — Standard atmospheres for conditioning and testing of footwear and components for footwear*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

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3.1
colour fastness
ability of a footwear material or component to maintain its colour after the action of various agents

3.2
thick leather
leather with a thickness greater than 2 mm

4 Apparatus and materials

4.1 Method A

The following apparatus and materials shall be used.

4.1.1 **Test machine**, with the elements given in 4.1.1.1 to 4.1.1.8.

4.1.1.1 A 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 a distance of 35 mm to 40 mm and back again at a rate of 40 cycles/min ± 2 cycles/min.

4.1.1.3 A pair of clamps positioned at the ends of the platform at 90° to the 80 mm edges and designed to clamp the test specimen against the platform. The clamp faces shall be at 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 A rubbing finger with a flat horizontal lower surface capable of holding a square felt pad (4.1.2). The depth of the cavity that holds the square felt pad should be 3,9 mm ± 0,1 mm. 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 or 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 white or black pure wool felt**, with the requirements given in 4.1.2.1 to 4.1.2.4.

4.1.2.1 Sides of length: 15 mm ± 1 mm.

4.1.2.2 Mass per unit area: 1 900 g/m^2 ± 150 g/m^2.

4.1.2.3 Thickness: 6,0 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.

4.1.2.4 pH of water extract: between 4,5 and 8,0, in accordance with ISO 4045.

Black felts shall be dyed with Acid Black 24 (C.I. 26370).

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