

Leather - Tests for colour fastness - Colour fastness to perspiration (ISO 11641:2012)

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NATIONAL FOREWORD

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English Version

**Leather - Tests for colour fastness - Colour fastness to
perspiration (ISO 11641:2012)**

Cuir - Essais de solidité des coloris - Solidité des coloris à
la sueur (ISO 11641:2012)

Leder - Farbechtheitsprüfungen - Farbechtheit gegen
Schweiß (ISO 11641:2012)

This European Standard was approved by CEN on 14 November 2012.

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Foreword

This document (EN ISO 11641:2012) has been prepared by Technical Committee CEN/TC 289 "Leather", the secretariat of which is held by UNI, in collaboration with the International Union of Leather Technologists and Chemists Societies.

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of an identical text or by endorsement, at the latest by May 2013, and conflicting national standards shall be withdrawn at the latest by May 2013.

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This document supersedes EN ISO 11641:2003.

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Endorsement notice

The text of ISO 11641:2012 has been approved by CEN as a EN ISO 11641:2012 without any modification.

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Leather — Tests for colour fastness — Colour fastness to perspiration

1 Scope

This International Standard specifies a method for determining the colour fastness to perspiration of leather of all kinds at all stages of processing. It applies particularly to gloving, clothing and lining leathers, as well as leather for the uppers of unlined shoes.

The method uses an artificial perspiration solution to simulate the action of human perspiration. Since perspiration varies widely from one individual to the next, it is not possible to design a method with universal validity, but the alkaline artificial perspiration solution specified in this International Standard will give results corresponding to those with natural perspiration in most cases.

NOTE In general, human perspiration is weakly acidic when freshly produced. Micro-organisms then cause it to change, the pH usually becoming weakly alkaline (pH 7,5 to 8,5). Alkaline perspiration has a considerably greater effect on the colour of leather than has acid perspiration. Therefore, for coloured leather, an alkaline perspiration solution is used to simulate the most demanding conditions encountered in practice.

2 Normative references

The following referenced documents are indispensable for the application 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-A04, *Textiles — Tests for colour fastness — Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics*

ISO 105-A05, *Textiles — Tests for colour fastness — Part A05: Instrumental assessment of change in colour for determination of grey scale rating*

ISO 105-E04, *Textiles — Tests for colour fastness — Part E04: Colour fastness to perspiration*

ISO 105-F01, *Textiles — Tests for colour fastness — Part F01: Specification for wool adjacent fabric*

ISO 105-F02, *Textiles — Tests for colour fastness — Part F02: Specification for cotton and viscose adjacent fabrics*

ISO 105-F03, *Textiles — Tests for colour fastness — Part F03: Specification for polyamide adjacent fabric*

ISO 105-F04, *Textiles — Tests for colour fastness — Part F04: Specification for polyester adjacent fabric*

ISO 105-F05, *Textiles — Tests for colour fastness — Part F05: Specification for acrylic adjacent fabric*

ISO 105-F06, *Textiles — Tests for colour fastness — Part F06: Specification for silk adjacent fabric*

ISO 105-F07, *Textiles — Tests for colour fastness — Part F07: Specification for secondary acetate adjacent fabric*

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

ISO 2418, *Leather — Chemical, physical and mechanical and fastness tests — Sampling location*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

3 Principle

A leather specimen is soaked in artificial perspiration solution and a piece of adjacent fabric, also soaked in artificial perspiration solution, is laid against each side to be tested. The composite specimen is left under pressure for a specified time in a suitable apparatus. The leather specimen and adjacent fabric are then dried, and the change in colour of the specimen and the staining of the adjacent fabric assessed with the grey scales.

Leathers with a finish may be tested intact or with the finish broken.

The general colour fastness testing principles shall be in accordance with those described in ISO 105-A01, taking into account that the substrate is leather.

4 Apparatus and materials

Ordinary laboratory apparatus and

4.1 Test apparatus, consisting of a stainless-steel frame, into which a rectangular weight-piece approximately 5 kg in mass and approximately 115 mm × 60 mm in cross-section fits accurately, so that a uniform pressure of $12,5 \pm 1,0$ kPa can be applied on the composite specimen placed between rectangular plates of an inert material, e.g. glass or acrylic-resin, of the same length and width as the weight-piece and about 1,5 mm thick.

The test apparatus shall be constructed so that if the weight-piece is removed during the tests, the pressure of 12,5 kPa remains unchanged.

Other devices may be used provided that equivalent results are obtained.

NOTE An example of a suitable apparatus available commercially is given in Annex A.

4.2 Oven, maintained at $37\text{ °C} \pm 2\text{ °C}$.

4.3 Adjacent fabrics (see ISO 105-A01). Either

- a) a multifibre adjacent fabric, complying with ISO 105-F10, measuring approximately 100 mm × 40 mm, or
- b) two single-fibre adjacent fabrics, complying with the relevant specification in ISO 105-F01 to F07.

NOTE Examples of suitable commercial sources are given in Annex A.

4.4 Demineralized water, grade 3 in accordance with ISO 3696:1987.

4.5 Alkaline artificial perspiration solution, containing, per litre of solution: