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Leather — Tests for colour fastness — Colour fastness to cycles of to-and-fro rubbing

Cuir — Essais de solidité des coloris — Solidité des coloris au frottement en va-et-vient

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html

This document was prepared by the Fastness Tests Commission of the International Union of Leather Technologists and Chemists Societies (IUF Commission, IULTCS) in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 289, *Leather*, the secretariat of which is held by UNI, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

The first edition was based on IUF 450 published in *J. Soc. Leather Tech. Chem.*, **71**, pp. 24–25 (1987), and declared an official method of the IULTCS in October 1989.

IULTCS, originally formed in 1897, is a world-wide organization of professional leather societies to further the advancement of leather science and technology. IULTCS has three Commissions, which are responsible for establishing international methods for the sampling and testing of leather. ISO recognizes IULTCS as an international standardizing body for the preparation of test methods for leather.

This third edition cancels and replaces the second edition (ISO 11640:2012). This new version is a technical update of the procedures. Clause 3 is new, and 5.2, 7.2, 7.4, 8.2, 8.6 and 8.7 have been revised.

The rubbing of a leather surface with a wool felt is also known as the “VESLIC rub test”. VESLIC (Association of Swiss Leather Chemists and Technologists) was the original developer of the test method and equipment.

Leather — Tests for colour fastness — Colour fastness to cycles of to-and-fro rubbing

1 Scope

This document specifies a method for determining the behaviour of the surface of a leather on rubbing with a wool felt.

It is applicable to leathers of all kinds.

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

ISO 2419, *Leather — Physical and mechanical tests — Sample preparation and conditioning*

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

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

ISO 9073-2, *Textiles — Test methods for nonwovens — Part 2: Determination of thickness*

ISO 11641, *Leather — Tests for colour fastness — Colour fastness to perspiration*

EN 15987, *Leather — Terminology — Key definitions for the leather trade*

3 Terms and definitions

For the purposes of this document, the leather terms and definitions given in EN 15987 shall 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/

4 Principle

One side of the leather specimen is rubbed with pieces of reference wool felt under a given pressure for a given number of forward and backward motions.

The degree of colour staining of the wool felt and the change in colour of the leather are assessed with grey scales. Any other visible change in, or damage to, the surface of the leather is also reported.

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.

5 Apparatus and materials

Ordinary laboratory apparatus and the following:

5.1 Rub fastness test apparatus incorporating the elements specified in 5.1.1 to 5.1.3, and optionally including those described in 5.1.4.

5.1.1 A carriage with:

a) a horizontal, completely planar metal platform;

b) a holder for fastening the leather to the platform, leaving approximately 80 mm exposed;

c) a device with which the leather may be extended at least 20 % linearly in the direction of rubbing.

5.1.2 A finger, 500 g ± 25 g in mass, removable, yet able to be fixed firmly in place and able to freely move vertically, with:

a) a base measuring 15 mm × 15 mm;

b) a device for attaching pieces of wool felt (see 5.2) to the base; the depth of the cavity shall be 3,9 mm ± 0,1 mm;

c) a weight-piece of mass 500 g ± 10 g to load the finger up to a total mass of 1 000 g ± 35 g;

d) means of lowering the finger with the base flat onto the test specimen.

5.1.3 Means for driving the carriage to and fro with a distance of travel of 35 mm to 40 mm at a frequency of 40 cycles/min ± 2 cycles/min for the complete forward and backward motion.

5.1.4 Convenient, but not essential, elements as follows:

a) means of adjusting the position of the finger at right angles to the direction of rubbing, so that two or three positions may be used for rubbing on one piece of leather;

b) a motor to drive the carriage forward and backward (see 5.1.3);

c) means for pre-selecting a given number of cycles.

5.2 Rubbing material, square pieces of white or black wool felt, measuring approximately 15 mm × 15 mm, punched out of a sheet of pure wool felt meeting the following specifications:

— pH of water extract between 4,5 and 8,0, according to ISO 4045;

— mass per unit area: 1 900 g/m^2 ± 150 g/m^2;

— thickness, determined in accordance with ISO 9073-2, Method A: 6,0 mm ± 0,5 mm.