INTERNATIONAL STANDARD

ISO 11646

IULTCS/IUP 32

Second edition
2014-03-01

Leather — Measurement of area

Cuir — Mesurage de la surface

Reference numbers
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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 meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

ISO 11646 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 289, *Leather*, in collaboration with the Physical Tests Commission of the International Union of Leather Technologists and Chemists Societies (IUP Commission, IULTCS), in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

IULTCS, originally formed in 1897, is a worldwide 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.

The first edition of ISO 11646 was based on IUP 32 published in *J Soc. Leather Tech. Chem.* **73,** pp. 23-24 (1989), and declared an official method of the IULTCS in October 1989.

This second edition of ISO 11646 cancels and replaces the first edition (ISO 11646:1993), which has been technically revised in 4.2 and 5.1.2, to clarify the importance of using only one specific standard atmosphere (20 °C and 65 % RH).

This International Standard is written in SI units, in accordance with ISO/IEC Directives. The use of the square foot, still common in the leather trade in some countries, is discouraged. If, for commercial reasons, the use of the square foot may seem necessary, it is obtained by the conversion 1 sq ft = 0,092 9 m^2.

Leather — Measurement of area

1 Scope

This International Standard specifies a method of measuring the area of pieces of leather. It is intended only for the measurement of dressed and other dry flexible leathers.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

3 Principle

The area of the conditioned leather is measured with a mechanical pin-wheel machine.

4 Apparatus

4.1 Mechanical pin-wheel area-measurement machine

The machine used should preferably have a feed-roller speed of 20 m/min ± 2 m/min. The distance between the centres of the pins on two adjacent pin-wheels should preferably be 25,4 mm ± 2,5 mm measured parallel to the axis of the pin-wheel roller. Pin-wheel machines which do not conform to these recommendations may also be used, but the actual design values shall be stated in the test report. (See Annex A for information on these machines.)

4.2 Circular calibration template

The template shall be made of flexible reinforced material, for calibrating the pin-wheel machine immediately before the machine is used. The area of the template shall not be less than 5 % of the pin-wheel machine capacity, and the width of the template shall not be greater than 50 % of the machine's working width.

The area of the template shall, if possible, be within ± 50 % of the anticipated area of the piece of leather to be measured. If this is not possible, feed the same template through the machine a number of times N without resetting the machine to zero until the total reading is within ± 50 % of the anticipated test-specimen area, and treat this total as a single measurement.

When not in use, the template(s) shall be kept flat in the specific standard atmosphere defined in ISO 2419 (20 °C and 65 % RH). The area of the template(s) shall be verified at least once a year by an independent body using measurement instruments traceable to a national standard calibration procedure. The template is acceptable if its measured area is within ± 0,5 % of its nominal area.

It is recommended that users of this International Standard keep a record book of the measurements obtained during the daily calibration procedure. lt is to be inspected at regular intervals to detect any consistent trends towards inaccurate readings, e.g. the left side of the machine always reads low, the right side tends to read high. This gives advance warning of faults, which are of use to the maintenance engineer when servicing the machine.