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IULTCS/IUP 44

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Leather — Physical and mechanical tests — Measurement of stitch tear resistance

Cuir — Essais physiques et mécaniques — Mesurage de la résistance à l'arrachement au point de couture

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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 of 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 www.iso.org/iso/foreword.html.

This document was prepared by the Physical Test Commission of the International Union of Leather Technologists and Chemists Societies (IUP 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).

It is based on IUP 44, originally published in *J. Soc. Leather Trades Chemists*, **84**, p. 409: 2000, and declared an official method of the IULTCS in 2001.

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 23910:2017), which has been technically revised with the following changes:

— the wording of 6.1 and 6.2 has been modified to remove possible misunderstanding regarding the conditioning of samples.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Leather — Physical and mechanical tests — Measurement of stitch tear resistance

1 Scope

This document specifies a method for determining the stitch tear resistance of leather. It can be used on all leathers but is particularly suitable for leathers over 1,2 mm in thickness.

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

ISO 2419:2012, *Leather — Physical and mechanical tests — Sample preparation and conditioning*

ISO 2589, *Leather — Physical and mechanical tests — Determination of thickness*

ISO 7500-1:2018, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

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

3 Terms and definitions

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

A leather test piece is pulled against a mandrel of specified shape and dimensions, inserted through a slit in the leather, and the force required to tear the leather is recorded.

5 Apparatus

5.1 Tensile testing machine, with:

— a force range appropriate to the specimen under test;

— a means of recording the force as specified by ISO 7500-1:2018, Class 2;

— a uniform speed of separation of the jaws of (100 ± 20) mm/min;

— jaws, minimum length 25 mm in the direction of the applied load, designed to apply constant clamping by mechanical or pneumatic means. The texture and design of the inside faces of the jaws shall be such that, at the maximum load attained in the test, the specimen does not slip at either jaw.

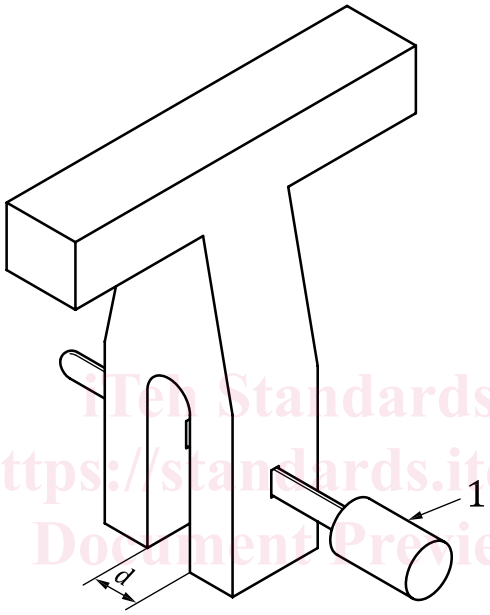
5.2 Metal test piece holder, of the shape shown in Figure 1.

NOTE Figure 1 shows the test piece holder with the mandrel (5.3) in place.

5.3 Metal mandrel, of the shape and dimensions shown in Figure 2.

5.4 Thickness gauge, as specified in ISO 2589.

5.5 Press knife, conforming to the requirements of ISO 2419, the inner wall of which is a rectangle (20 ± 1) mm × (50 ± 1) mm and incorporates a further cutting edge, the inner wall of which will cut a slit in the test piece as shown in Figure 3 in one operation. All parts of the press knife shall lie in the same plane.



Key

1 mandrel

d separation of arms of test piece holder, approximately 5 mm to 7 mm

Figure 1 — Metal test piece holder shown with mandrel in place

Dimensions in millimetres

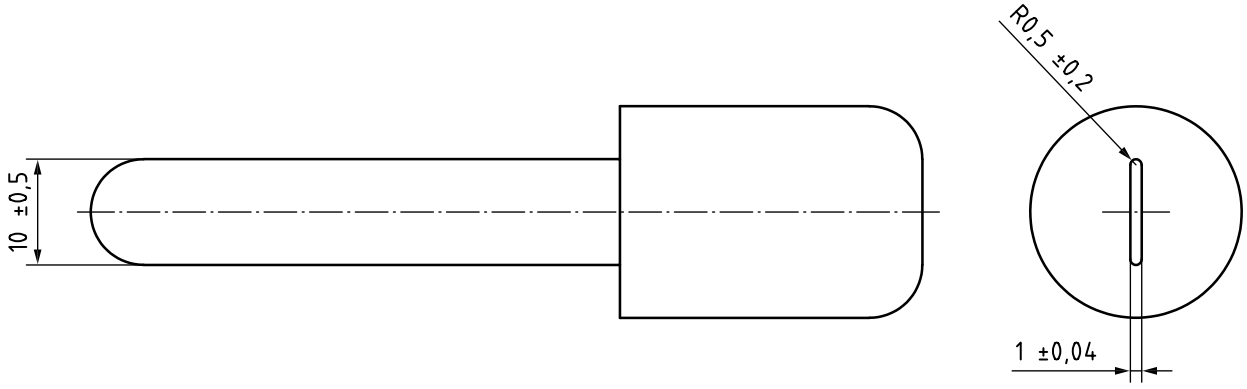


Figure 2 — Metal mandrel