INTERNATIONAL STANDARD

ISO 23910

IULTCS/IUP 44

First edition
2007-10-15

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

Reference number
ISO 23910:2007(E)
IULTCS/IUP 44:2007(E)

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Published in Switzerland

Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 23910/IUP 44 was prepared by the Physical Tests Commission of the International Union of Leather Technologists and Chemists Societies (IUP Commission, IULTCS) in collaboration with the European Committee for Standardisation (CEN) Technical Committee CEN/TC 289, *Leather*, the secretariat of which is held by UNI, in accordance with the agreement on technical co-operation 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 official methods 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.

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

1 Scope

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

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

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

ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

3 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.

4 Apparatus

4.1 Tensile testing machine, with:

— a force range appropriate to the specimen under test;

— a means of recording the force as specified by Class 2 of ISO 7500-1:2004;

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

— jaws, with a minimum length of 30 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.

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

NOTE Figure 1 shows the test piece holder with the mandrel (4.1.2) in place.

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

4.2 **Thickness gauge**, as specified in ISO 2589.

4.3 **Press knife**, the inner wall of which is a rectangle 20 mm ± 1mm × 50 mm ± 1 mm, conforming to the requirements of ISO 2419.

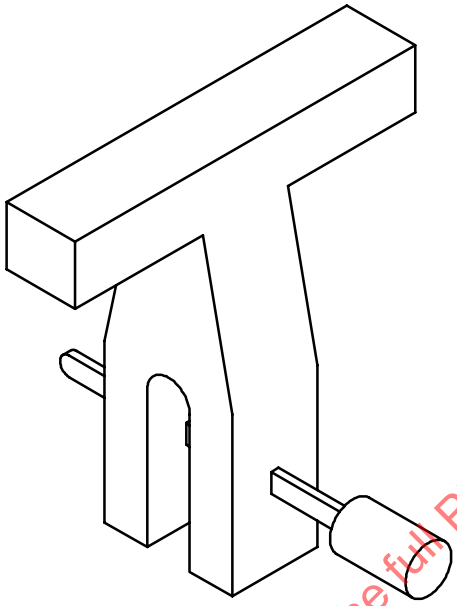

Figure 1 — Test piece holder

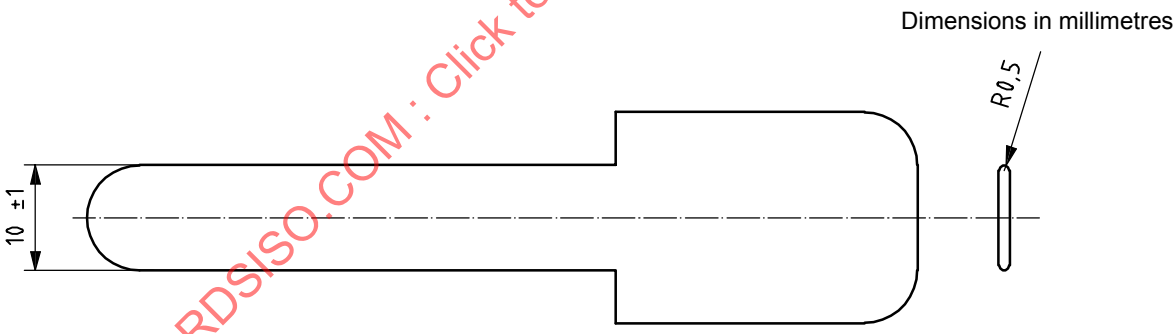

Figure 2 — Metal mandrel

5 Sampling and sample preparation

5.1 After conditioning in accordance with ISO 2419, sample in accordance with ISO 2418. Cut six test pieces by applying the press knife (4.3) to the grain surface. Cut three test pieces with the longer edge parallel to the backbone and three with the longer edge perpendicular to the backbone.

NOTE If there is a requirement for more than two hides or skins to be tested in one batch, then only one sample in each direction need be taken from each hide or skin, provided that the overall total is not less than three test pieces in each direction.

5.2 Condition the test pieces in accordance with ISO 2419.