
**Leather — Determination of flex
resistance —**

**Part 1:
Flexometer method**

Cuir — Détermination de la résistance à la flexion —

Partie 1: Méthode au flexomètre

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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).

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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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

ISO 5402-1 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).

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 second edition cancels and replaces the first edition (ISO 5402-1:2011), which has been technically revised.

Subclauses [5.1](#), [5.1.1](#), [5.1.2](#), [7.2](#) to [7.6](#) have been technically revised.

A list of all parts in the ISO 5402 series can be found on the ISO website.

Leather — Determination of flex resistance —

Part 1: Flexometer method

1 Scope

This document specifies a method for determining the wet or dry flex resistance of leather and finishes applied to leather. It is applicable to all types of flexible leather below 3,0 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, *Leather — Physical and mechanical tests — Sample preparation and conditioning*

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

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Principle

A test piece is folded with the surface to be tested inwards and clamped in an upper movable clamp and with the surface to be tested outwards in a lower fixed clamp. Movement of the upper clamp causes a fold in the test piece to run along it. The test piece is examined periodically for damage.

5 Apparatus and reagents

5.1 Test machine, consisting of a movable upper clamp, a fixed lower clamp and a counter as described in 5.1.1 to 5.1.3 and as shown in Figure 1 and Figure 2.

5.1.1 Upper clamp, consisting of a pivoting pair of flat plates of 4 mm thickness as shown in Figure 1.

The small plate (H) has the basic shape of a trapezium but with a radius of 2 mm at the acute corner. It has a ledge (G) to support the folded test piece. The larger plate (I) has a shape as shown in Figure 1. The clamp tightening screw (F) tightens the plates together and also acts as a stop to prevent the test piece from being incorrectly positioned. The design of the clamp should ensure that the two faces of the clamp remain parallel when clamping the test piece. The upper clamp is reciprocated by a motor about a horizontal axle, descending through an angle (A) of $(22,5 \pm 0,5)^\circ$ at a frequency of (100 ± 5) cycles/min.