



# International Standard

**ISO  
2419**

**IULTCS  
IUP 3**

## **Leather — Physical and mechanical tests — Specimen and test piece conditioning**

*Cuir — Essais physiques et mécaniques — Conditionnement des  
spécimens et des éprouvettes*

**Fifth edition  
2024-08**

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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 document 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](http://www.iso.org/directives)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO [had/had not] received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

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](http://www.iso.org/iso/foreword.html).

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 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*, in accordance with the Agreement on technical co-operation between ISO and CEN (Vienna Agreement).

It is based on IUP 1 and IUP 3 originally published in *J. Soc. Leather Trades Chemists*, **42**, p. 382, (1958) and **42**, p. 386 (1958) respectively, and declared official methods of the IULTCS in 1959. Updated versions were published in *J. Soc. Leather Tech. Chem.*, **82**, p. 199 (1998) and further revisions published in *J. Soc. Leather Tech. Chem.*, **84**, p. 241 (2000), and reconfirmed as official methods in March 2001. A further revision of IUP 3 was published in *J. Soc. Leather Tech. Chem.*, **83**, p. 337 (2002), which was confirmed as an official method in May 2003.

This fifth edition cancels and replaces the fourth edition (ISO 2419:2012), which has been technically revised.

The main changes are as follows:

- the title is changed;
- the terminology is modified to be in line with ISO 2418:2023;
- Clauses 4 and 5 of the previous edition (ISO 2419:2012) have been deleted (these clauses are now part of ISO 2418:2023).

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](http://www.iso.org/members.html).

## Introduction

Conditioning the humidity and temperature of leathers is fundamental prior to the application of physical test. This is due to the dimensional changes which naturally occur within the material.

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# Leather — Physical and mechanical tests — Specimen and test piece conditioning

## 1 Scope

This document specifies the conditioning of leather for physical and mechanical testing in standard atmospheres. It is applicable to all types of dry leather.

## 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.

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

ISO 15115, *Leather — Vocabulary*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15115, EN 15987 and the following apply.

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

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

### 3.1 specimen

portion or part of a leather hide or skin from which *test pieces* (3.2) are cut

### 3.2 test piece

specific portion of a *specimen* (3.1) cut in a suitable shape or dimensions for testing

### 3.3 atmosphere

ambient conditions defined by the parameters temperature and relative humidity

### 3.4 standard atmosphere

atmosphere maintained within prescribed tolerances, in which a *specimen* (3.1) and/or *test pieces* (3.2) are kept for a given period of time before and, if required, during testing

### 3.5 conditioning

operation designed to bring a *specimen* (3.1) and/or *test pieces* (3.2) into a specified condition in relation to temperature and relative humidity by keeping it for a given period of time in the *standard atmosphere* (3.4) with free access of moving air to all surfaces

## 4 Principle

Leather specimens are kept in standardised conditions of temperature and humidity for a set a period of time to achieve uniformity in material to be tested.

## 5 Standard atmospheres

### 5.1 Reference standard atmosphere

The reference standard atmosphere shall have a temperature of 23,0 °C and a relative humidity of 50,0 %.

### 5.2 Alternative standard atmospheres

#### 5.2.1 General

Alternative, but not equivalent, atmospheres may be used only if the parties involved agree on their use. In case of dispute, the reference standard atmosphere shall be used.

#### 5.2.2 Specific standard atmosphere

The alternative specific standard atmosphere shall have a temperature of 20,0 °C and a relative humidity of 65,0 %.

#### 5.2.3 Tropical standard atmosphere

The alternative tropical standard atmosphere shall have a temperature of 27,0 °C and a relative humidity of 65,0 %.

### 5.3 Tolerance zone for standard atmospheres

The tolerance for temperature is  $\pm 2,0$  °C. The tolerance for relative humidity is  $\pm 5,0$  %.

## 6 Conditioning

Condition the specimen and/or test pieces by keeping them in one of the standard atmospheres specified in [Clause 4](#). Support the specimen and/or test pieces to allow free access of air to all surfaces, keeping the air in motion around it (see [3.5](#)). Condition the specimen and/or test pieces for a minimum of 24 h prior to testing.

The 24 h conditioning is for dry leather. Leather with high moisture contents should be dried prior to conditioning.

## 7 Testing

When specified in the individual test method, carry out the testing in the same standard atmosphere as that in which the test pieces were conditioned.

## 8 Test report

The test report shall include at least the following:

- a) a reference to this document, i.e. ISO 2419:2024;
- b) reference to the climate conditions applied;
- c) details of the alternative atmosphere, if used, for conditioning and testing;

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- d) details of any deviations from the procedure described in this document;
- e) the date of the test.

NOTE This document is applied for the conditioning of specimens prior to multiple physical and chemical tests. Therefore, a test report for conditioning the specimens is not required individually, but is referenced to in the final report (after physical or chemical testing).

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