INTERNATIONAL STANDARD

ISO 11644

IULTCS IUF 470

Third edition
2022-10

Leather — Test for adhesion of finish

Cuir — Essai d'adhérence de la couche de finissage

Reference numbers
ISO 11644:2022(E)
IULTCS/IUF 470:2022(E)

© ISO 2022



COPYRIGHT PROTECTED DOCUMENT

© ISO 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

© ISO 2022 – All rights reserved

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Principle **2**
5 Apparatus and materials **2**
6 Preparation of test specimens **4**
7 Conditioning of the test specimens **6**
8 Procedure **6**
9 Test report **9**
Annex A (informative) **Commercial sources for apparatus and materials** **11**
Annex B (informative) **Precision data from interlaboratory collaborative trial** **12**

© ISO 2022 – All rights reserved

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.

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

It is based on IUF 470 published in *J. Soc. Leather Tech. Chem.,* **74**, pp. 155–160, 1990, and was declared an official method of the IULTCS in September 1991.

This third edition cancels and replaces the second edition (ISO 11644:2009), which has been technically revised.

The main changes are as follows:

— Clause 1: addition in the Scope of exclusions from the field of application of unpigmented articles or articles without a continuous coating layer;

— Clause 7: modifications of conditioning of test specimens and specimens bonding time;

— Clause 9: modifications in the test report.

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.

© ISO 2022 – All rights reserved

Introduction

Prior to the first edition of this document in 1993, a similar test method to that specified here, using an expoxy adhesive and metal adherent plates, had been in use in the leather trade for many years, but was never declared an official method by IULTCS or ISO. The adhesive frequently penetrates thin finish films, thus increasing the adhesion value unrealistically, and it is usually not possible to measure wet adhesion as there is insufficient adhesion to the metal when water is present. Finishes with insufficient adhesion to the adhesive also occur quite frequently. In spite of these drawbacks, this old method was used regularly and was referred to in many specifications. The method specified in this document eliminates most of these drawbacks.

The adhesives used in this method harden quickly and there is no time for them to penetrate even quite thin finishes unless the finish has open cracks in it. While adhesion to most finishes is sufficient, a few cases still exist in which the adhesion is insufficient and either a different adhesive has to be used or the surface lightly roughened. As the adhesive does not penetrate, it is quite possible to test different layers of a multi-layer finish separately. Such a finish can be tested several times until all the layers have been removed from the leather. It would be advisable for specifications to make allowance for this fact.

A strip of hard PVC is used as the adherent plate; this gives good adhesion under wet conditions. Wet adhesion can therefore be measured easily. Experience has shown that this "real" wet-adhesion value is often lower, a fact that is also to be considered when drawing up specifications based on this method.

© ISO 2022 – All rights reserved

Leather — Test for adhesion of finish

1 Scope

This document specifies a method for measuring the adhesion of the finish to leather or the adhesion between two adjacent layers of the finish.

The method is valid for all finished flexible leathers with a smooth surface that can be bonded to an adherent plate without the adhesive penetrating into the finish. Preliminary experiments can be necessary to determine whether these conditions are met.

This test method applies to finished leathers with a thick finish-coat.

The method specified in this document does not apply to unpigmented articles or articles without a continuous coating layer, such as:

— nubuk;

— aniline;

— pull-up;

— suede;

— perforated 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.

ISO 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

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*

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 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
adhesion
force required to pull the leather away from its surface finish layer, the force being applied steadily, at an angle of about 90°, to a rigid adherent plate to which the finished side of the leather has been bonded

© ISO 2022 – All rights reserved