

INTERNATIONAL
STANDARD

ISO
15700

IULTCS
IUF 420

First edition
1998-05-01

**Leather — Tests for colour fastness —
Colour fastness to water spotting**

*Cuir — Essais de solidité des teintures — Solidité des teintures à la goutte
d'eau*



Reference number
ISO 15700:1998(E)
IULTCS/IUF 420

Foreword

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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.

International Standard ISO 15700 was prepared by the Fastness Tests Commission of the International Union of Leather Technologists and Chemists Societies (IUF Commission, IULTCS). It is based on IUF 420 published in *J. Soc. Leather Tech. Chem.*, **59**, p. 99 (1975), and declared an official method of the IULTCS in 1975.

Annex A of this International Standard is for information only.

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Printed in Switzerland

Leather — Tests for colour fastness — Colour fastness to water spotting

1 Scope

This International Standard specifies a method for assessing the effect, on leather of all kinds, caused by spotting with water.

The method is suitable for assessing the change in physical appearance and the colour change of the leather.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 105-A01:1994, *Textiles — Tests for colour fastness — Part A01: General principles of testing.*

ISO 105-A02:1993, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour.*

ISO 105-A05:1996, *Textiles — Tests for colour fastness — Part A05: Instrumental assessment of change in colour for determination of grey scale rating.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

3 Principle

Two drops of distilled water are placed at separate spots on the leather. After 30 min, any surplus water is removed with filter paper from one of the drops and any physical effects are observed. The other drop is allowed to evaporate overnight and the change in colour of the leather is assessed with the standard grey scale.

Since the finish of a patent leather and other plastic coated leathers is impervious to water, an alternative procedure is required in which the water spot are placed on the inside surface of the leather.

The general colour fastness testing principles are in accordance with those described in ISO 105-A01, taking into account the differences between textile substrates and leather.

4 Apparatus and materials

Ordinary laboratory apparatus and

4.1 Pipette, to deliver water drops of approximately 0,15 ml.

4.2 Water, grade 3 as defined in ISO 3696.

4.3 Grey scale for assessing change in colour, in accordance with ISO 105-A02.

NOTE 1 If a suitable instrumental system is available for measuring the change in colour in accordance with ISO 105-A05, this may be used instead of the visual assessment method.

5 Test specimen

Take a specimen of leather, at least 100 mm x 50 mm in size, which is representative of the piece of leather available for testing.

6 Procedure (for patent leathers, see clause 7)

6.1 Place the specimen on a flat surface with the surface to be tested uppermost. Normally this will be the side corresponding to the outside of the leather article to be produced from the piece of leather.

6.2 With the pipette (4.1) place two drops (each approximately 0,15 ml) of water (4.2) approximately 50 mm apart on the surface of the specimen.

6.3 After 30 min remove the residual water (if any) from one spot by gently blotting with filter paper and note any physical effects the water has had on the leather.

NOTE 2 The physical effects which may be observed include swelling and loss of lustre. To detect these, it may be necessary to observe the leather from all directions.

Describe the severity of the effect using one of the following terms: slight, moderate, or severe.

6.4 After allowing the specimen to stand for 16 h, assess, either visually in accordance with ISO 105-A02 or instrumentally in accordance with ISO 105-A05, the grey scale rating corresponding to the change in colour of that part of the specimen which was spotted with the second drop.

To assess the permanence of the colour change, subject the leather surface to a light manual treatment as described below and again assess the change in colour using the grey scale. (Subject the leather to the type of manual treatment normally applied by the end user to this type of leather. For example, polish shoe upper leathers lightly with a clear wax shoe polish, stake upholstery, gloving and clothing leathers lightly and brush suede leathers lightly.)

7 Patent leathers and other plastic-coated leathers

NOTE 3 The wetting of such leathers from the back during use can cause ring-shaped marks or patches under the finish. However, such effects are not produced by applying water to the finished side of the leather, as in this International Standard, because patent leather finishes are impervious to water. Therefore an alternative procedure is required for this type of leather.

Test the fastness to water spotting of patent leather and other plastic coated leathers by wetting the inside surface of the specimen. Wet a small area with distilled water and, if necessary, aid wetting by rubbing in the water, for example, with a spatula. Continue adding water until it has penetrated through to the finished side or caused noticeable swelling. When this has happened, wait for 30 min and assess the effects on the leather as in 6.3.

8 Effect of wear

In particular situations, it may be informative to test the specimen after it has been subject to simulated wear. Pieces of leather may, for example, first be subjected to a repeated flexing treatment in a suitable machine prior to testing for fastness to water spotting.

9 Test report

The test report shall include the following information:

- a) a reference to this International Standard;
- b) a description of the type of leather tested;
- c) an indication as to which surface of the leather was tested;
- d) the physical effects of the water has had on the leather and the severity of each effect (see 6.3);
- e) the grey scale method used and the grey scale rating obtained for the change in colour of the specimen before and after manual treatment (see 6.4);

- f) the method of assessment and the grey scale rating obtained for the change in colour of the specimen before and after simulated wear, if applicable (see clause 8);
- g) details of any deviations from the procedure specified;
- h) the date of the test.

Annex A
(informative)

Bibliography

- [1] The development of this test has been described in, *J. Soc. Leather Trades' Chem.*, **45**, p. 51 (1961).
- [2] IUF 120, *General principles of colour fastness testing of leather*.

ICS 59.140.30

Descriptors: leather, colour fastness, tests, colour-fastness tests, determination, water resistance.

Price based on 5 pages
