



SLOVENSKI STANDARD

SIST EN 14340:2004

01-maj-2004

Usnje – Fizikalno in mehansko preskušanje – Ugotavljanje odbijanja vode pri usnju za oblačila

Leather - Physical and mechanical tests - Determination of water repellency of garment leather

Leder - Physikalische und mechanische Prüfungen - Bestimmung der wasserabweisenden Eigenschaften von Bekleidungsleder

Cuir - Essais physiques et mécaniques - Détermination de la résistance au mouillage superficiel des cuirs pour vêtements

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ICS:

59.140.30	Usnje in krzno	Leather and furs
61.020	Oblačila	Clothes

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EUROPEAN STANDARD

EN 14340

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2004

ICS 59.140.30

English version

Leather - Physical and mechanical tests - Determination of water repellency of garment leather

Cuir - Essais physiques et mécaniques - Détermination de l'imperméabilité des cuirs pour vêtements

Leder - Physikalische und mechanische Prüfungen - Bestimmung der wasserabweisenden Eigenschaften von Bekleidungsleder

This European Standard was approved by CEN on 17 December 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 14340:2004) has been prepared by Technical Committee CEN/TC 289 "Leather", the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2004, and conflicting national standards shall be withdrawn at the latest by July 2004.

Annex A is normative. Annex B is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EN 14340:2004 (E)**1 Scope**

This European Standard specifies a method for determining the repellancy of leather to surface wetting. It is applicable to all leathers intended for use in clothing. The method does not determine the resistance of leather to water penetration.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN ISO 2418, *Leather – Chemical, physical and mechanical and fastness tests - Sampling location (ISO 2418:2002)*.

EN ISO 2419, *Leather - Physical and mechanical tests - Sample preparation and conditioning (ISO 2419:2002)*.

EN ISO 3696:1995, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)*.

3 Terms and definitions

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For the purposes of this European Standard, the following term and definition applies.

3.1**spray rating**

measure of the resistance of the surface of a leather to wetting

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4 Principle

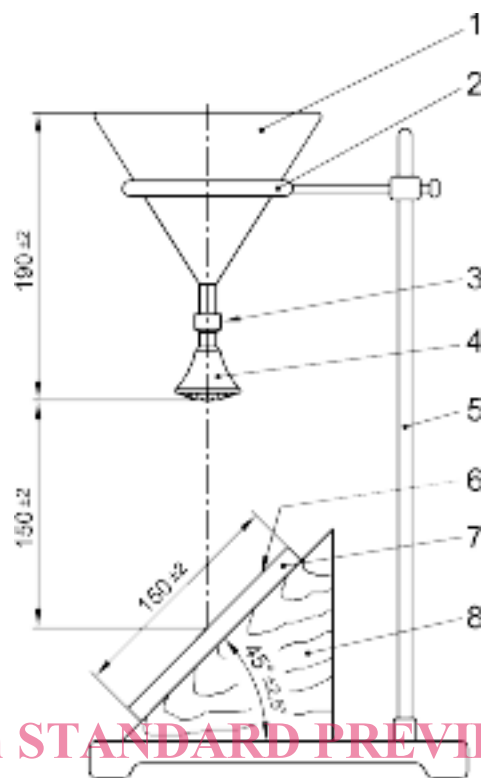
A specified volume of distilled or deionized water is sprayed onto a test piece, which has been mounted on a ring and placed at an angle of 45° so that the centre of the test piece is at a specified distance below the spray nozzle. The spray rating is determined by comparing the appearance of the test piece with descriptive and photographic standards. The mass of water absorbed by the test piece is determined by weighing before and after applying the water spray.

5 Apparatus

5.1 *Spray device*, as shown in Figure 1, consisting of a funnel, diameter 150 mm ± 2 mm, held vertically with a metal spray nozzle (5.2) connected to the end of the stem by flexible tubing of bore about 10 mm. The overall distance from the top of the funnel to the bottom of the nozzle is 190 mm ± 2 mm.

5.2 *Metal spray nozzle*, as shown in Figure 2, with approximate diameter of 33 mm, having a convex face with 19 holes of 0,9 mm ± 0,05 mm diameter distributed over the face of the nozzle. The duration of flow for 250 ml ± 5 ml of distilled or deionized water poured into the funnel shall be 27,5 s ± 2,5 s.

Dimensions in millimetres



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Key

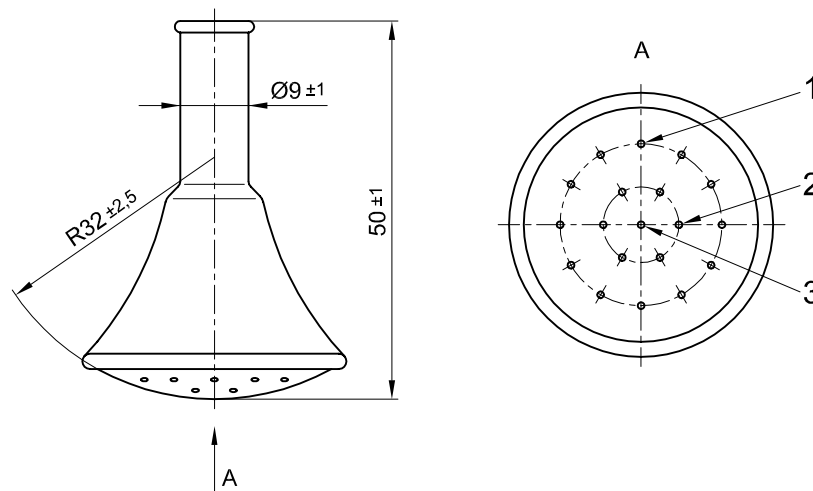
- 1 Glass funnel $\varnothing 150 \pm 2$
- 2 Ring support
- 3 Rubber tubing
- 4 Spray nozzle
- 5 Stand
- 6 Specimen
- 7 Specimen holder
- 8 Support (e.g. wood)

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Figure 1 — Apparatus for spray test

Dimensions in millimetres

**Key**

- 1 12 holes $\varnothing 0,9 \pm 0,05$ on a circle $\varnothing 21,4 \pm 0,05$
- 2 6 holes $\varnothing 0,9 \pm 0,05$ on a circle $\varnothing 10 \pm 0,05$
- 3 1 hole $\varnothing 0,9 \pm 0,05$ on centre

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Figure 2 — Spray nozzle

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5.3 Test piece holder, consisting of two metal rings which fit into each other. The inner ring is fixed and of outside diameter $150 \text{ mm} \pm 2 \text{ mm}$. The outer ring is adjustable so that the internal diameter can be reduced to 150 mm to allow the test piece to be securely clamped between the two rings. When in position for test, the rings rest on a suitable support so that the test piece is at an angle of $45,0^\circ \pm 2,5^\circ$ and with the centre of the clamped area $150 \text{ mm} \pm 2 \text{ mm}$ below the centre of the face of the metal nozzle.

5.4 Balance, reading to $0,001 \text{ g}$.

5.5 Distilled or deionized water, conforming to the requirements of grade 3 of EN ISO 3696:1995.

6 Sampling and sample preparation

6.1 Sample in accordance with EN ISO 2418. Cut 3 square test pieces of side $182 \text{ mm} \pm 2 \text{ mm}$ ensuring that they are taken from areas free from any holes or other damage.

NOTE 1 It can be necessary to trim the wool if a woolled sheepskin is being tested to allow secure clamping of the test piece.

NOTE 2 If there is a requirement for more than two hides or skins to be tested in one batch, then only one sample need be taken from each hide or skin, provided that the overall total is not less than three test pieces.

6.2 Condition the test pieces in accordance with EN ISO 2419.

6.3 Weigh the test piece to the nearest $0,001 \text{ g}$.

6.4 Carry out all further operations at a temperature of $20^\circ \text{C} \pm 2^\circ \text{C}$ or $23^\circ \text{C} \pm 2^\circ \text{C}$. There is no need for further humidity control.

7 Procedure

7.1 Mount the test piece securely on the test piece holder (5.3) with the face of the leather which would be exposed in wear uppermost. Place the test piece holder in position below the spray nozzle.

7.2 Pour 250 ml ± 5 ml of distilled or deionized water (5.5) at the controlled temperature (6.4) into the funnel quickly but steadily so that the spraying is continuous once it has commenced.

7.3 Immediately the spray has ceased, remove the holder and test piece and tap two diametrically opposite points of the frame against a solid object with the plane of the leather almost horizontal and the tested surface downwards.

7.4 Assign to the test piece the spray rating on either the following descriptive scale or the photographic scale in annex A which best describe the degree of wetting. Intermediate ratings are not to be attempted.

- a) Wetting of the whole of the sprayed surface.
- b) Wetting of half of the sprayed surface. This usually occurs through the merging of small, discrete wetted areas.
- c) Wetting of the sprayed surface only as small discrete areas.
- d) No wetting of, but adherence of small drops to, the sprayed surface.
- e) No wetting of and no adherence of small drops to the sprayed surface.

7.5 Examine the reverse side of the test piece and note any wetting.

7.6 Remove the test piece from the holder, blot gently to remove any water droplets which still adhere and re-weigh to the nearest 0,001 g.

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8 Expression of results

Calculate the mass of water absorbed, m_w , in grams and the percentage water absorption, m , using the formula:

$$m_w = M_2 - M_1$$

$$m = \frac{(M_2 - M_1) \times 100}{M_1}$$

where

M_1 is the initial mass of the test piece in grams;

M_2 is the mass of the test piece after the test in grams.

9 Test report

The test report shall include the following for each test piece:

- a) reference to this European Standard; i.e. EN 14340:2003;
- b) the spray rating (7.4);
- c) the mass of water absorbed, m_w , in g;
- d) the percentage of water absorbed, m ;