SLOVENSKI STANDARD
SIST ISO 2417:1998

01-april-1998

Usnje - Ugotavljanje vpijanja vode

Leather -- Determination of absorption of water

Cuir -- Détermination de l'absorption d'eau

Ta slovenski standard je istoveten z: **ISO 2417:1972**

ICS:

59.140.30 Usnje in krzno Leather and furs

SIST ISO 2417:1998 **en**

INTERNATIONAL STANDARD 2417

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Leather — Determination of absorption of water

First edition — 1972-12-01

UDC 675.06 : 532.7 : 546.212

Ref. No. ISO 2417-1972 (E)

Descriptors : animal products, leather, water absorption testing, tests.

Price based on 2 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2417 was drawn up by Technical Committee ISO/TC 120, *Leather.*

It was approved in November 1971 by the Member Bodies of the following countries :

Brazil	India	Portugal
Chile	Iran	Romania
Czechoslovakia	Israel	South Africa, Rep. of
Egypt, Arab Rep. of	Italy	Spain
France	Netherlands	Turkey
Germany	New Zealand	United Kingdom
Hungary	Poland	U.S.S.R.

No Member Body expressed disapproval of the document.

This International Standard is based on method IUP/7 of the International Union of Leather Chemists' Societies.

Leather — Determination of absorption of water

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the absorption of water by leather during immersion under static conditions.

The method is applicable to all types of leather, in all types of tannage, in all stages of dressing.

2 REFERENCES

ISO 2419, *Leather — Conditioning of test pieces for physical tests.*

ISO 2420, *Leather — Determination of apparent density.*

3 PRINCIPLE

Immersion, for a measured time in distilled water at a specified temperature, of a test piece of specified pattern and known mass or volume.

Measurement of the volume of water absorbed.

4 APPARATUS

4.1 Kubelka apparatus made of glass (see Figure).

To the rubber stopper C a glass rod or a nickel or stainless steel wire of diameter about 1 mm is fastened, to keep the test piece at the end of B distant from C. The graduations on the neck of the flask are in millilitres.

Dimensions in millimetres

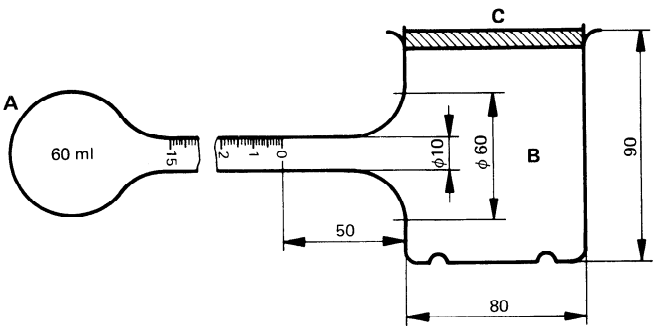

FIGURE — **Kubelka apparatus**

4.2 Balance, accurate to 0,01 g.

4.3 Steel press knife, the inner wall of which is a right circular cylinder of diameter 70 mm.

The angle formed at the cutting edge between the internal and external surfaces of the press knife shall be approximately 20°, and the wedge of this angle shall be of a depth exceeding the thickness of the leather.

5 TEST PIECES

Cut test pieces by applying the press knife to the grain surface. Then condition them in accordance with ISO 2419.

NOTES

1 To obtain cleanly cut test pieces, it is advantageous to place a thick sheet of paper between the sample and the cutting board.

2 Test pieces which have already been used for determination of apparent density (see ISO 2420) can be used in the water absorption test.

6 PROCEDURE

6.1 All operations must be carried out in a room at a controlled temperature of 20 ± 2 °C. (An alternative conditioning temperature, 27 ± 2 °C, may also be allowed).

6.2 Carefully wash the Kubelka apparatus before each test, rinse it with distilled water and keep it wet.

6.3 Place the apparatus with the bulb A directly below the cylinder B. Fill the apparatus with sufficient distilled water (about 75 ml) at 20 ± 2 °C to give a water level between 0 and 1 on the graduated scale.

6.4 Either weigh the test piece or determine its volume in accordance with the method described in ISO 2420. Note the scale reading at the water level and then place the test piece in the cylinder B. Run the water into this part of the apparatus to immerse the test piece. Close the cylinder with the rubber stopper C, to prevent evaporation losses.

6.5 After the test piece has been immersed for the prescribed time (see Notes 1 and 2 below), turn the apparatus so that the water drains into the bulb A. One minute after drainage has begun, note the scale reading at the water level and calculate the volume of water absorbed.

6.6 If the water absorptions after other durations are required, turn the apparatus immediately so that the water flows back into the cylinder B, and again covers the test piece.

6.7 Repeat the operations described in 6.5 and 6.6 at the required times.

NOTES

1 Each period of 1 min during which the water is being drained back into A is not to be considered as part of the period of immersion which precedes it, but as part of the subsequent period of immersion.

For example, if the water absorptions during periods of immersion of 15 and 60 min are to be measured on the same test piece, and the instant of first immersion is at time zero, subsequent actions will be as follows :

- at 15 min, begin draining;
- at 16 min, read off the residual volume and immediately re-immerse the test piece;
- at 60 min begin draining;
- at 61 min read off the residual volume.

2 For most purposes, measurements after two durations of immersion are sufficient, and if possible the periods specified should be chosen from the following :

1/4 h, 1/2 h, 1 h, 2 h, 24 h.

7 EXPRESSION OF RESULTS

Calculate the quantity of water absorbed by one of the following formulae :

$$Q = 100 \times \frac{V_1}{m} \text{ ml/100 g}$$

$$P = 100 \times \frac{V_1}{V_2} \text{ ml/100 ml}$$

where

Q is the quantity of water absorbed, in millilitres per 100 g of leather;

P is the quantity of water absorbed, in millilitres per 100 ml of leather;

m is the mass of the test piece, in grams;

V_1 is the volume of water absorbed, in millilitres;

V_2 is the volume of the test piece, in millilitres.

8 TEST REPORT

The test report shall include the following particulars :

a) reference to this International Standard;

b) the quantity of water absorbed, in millilitres per 100 g of leather (Q), or millilitres per 100 ml of leather (P), for each period of immersion;

c) any deviation from the prescribed method;

d) reference of the lot;

e) whether the test piece comes from a whole skin, bend, shoulder or belly;

f) controlled temperature at which the test was carried out (see 6.1).