INTERNATIONAL STANDARD

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IULTCS/IUP 35

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Leather — Heat stability of industrial-glove leather

Cuir — Stabilité à la chaleur du cuir pour gants industriels

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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.

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 11645 was prepared by the Physical Tests Commission of the International Union of Leather Technologists and Chemists Societies (IUP Commission, IULTCS). It is based on IUP 35 published in *J. Soc. Leather Tech. Chem.*, **73**, pp. 62-63 (1989), and declared an official method of the IULTCS in October 1989.

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Leather — Heat stability of industrial-glove leather

1 Scope

This International Standard specifies a method for assessing the changes in dimensions, shape and flexibility of leather upon application of heat, where such leather is intended for the manufacture of industrial gloves. It is applicable to both finished and unfinished leathers.

NOTE 1 The method can also be used for other items of protective clothing.

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 2418:1972, *Leather — Laboratory samples — Location and identification.*

ISO 2419:1972, *Leather — Conditioning of test pieces for physical tests.*

3 Principle

A test specimen is heated in an oven and any shrinkage is assessed, as well as any change in shape or flexibility.

4 Apparatus

4.1 Oven, fitted with a central rack, capable of maintaining a temperature of 200 °C ± 5 °C.

4.2 Calliper rule, readable to 0,1 mm.

4.3 Suitable apparatus for supporting the specimen and minimizing contact with the oven rack, such as a wire grid or pipe-clay triangle.

4.4 Stop-clock.

5 Specimen

5.1 Carry out sampling in accordance with ISO 2418, where possible.

5.2 From the laboratory sample, cut out a square test specimen (no obvious faults) of size not less than 100 mm × 100 mm. If the specimen is taken from the finished article, it is not always possible to obtain the correct size. In such cases, a smaller specimen may be taken from the palm of the glove. Such specimens shall not, however, measure less than 50 mm × 50 mm, as the accuracy of the method becomes too low with smaller samples. Their size shall be stated in the test report. Mark measurement reference points on the specimen as shown in figure 1, forming a square, using an indelible marker to ensure that measurements are made at exactly the same points before and after the test. In the case of specimens smaller than 100 mm × 100 mm, the measure-

ment reference points may be closer to the edge of the specimen.

Dimensions in millimetres

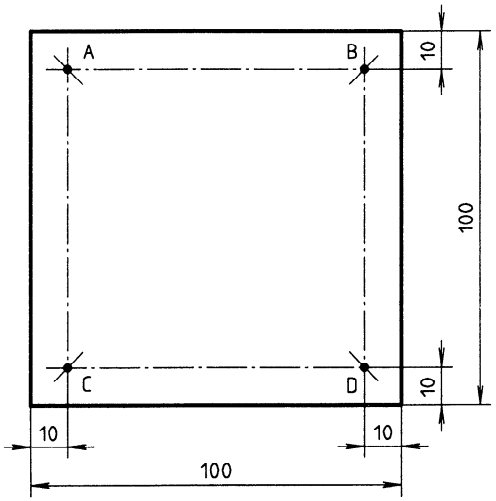

Figure 1 — Location of measurement-point positions on a typical specimen

6 Procedure

6.1 Condition the specimen in accordance with ISO 2419.

6.2 Measure, using the calliper rule (4.2), distances $\overline{AB}$ and $\overline{CD}$, as well as $\overline{AC}$ and $\overline{BD}$ (see figure 1). Calculate the mean of each pair of measurements. Use the mean values to calculate the area A_n enclosed by the straight lines joining the measurement points.

6.3 Preheat the oven (4.1) to 200 °C ± 5 °C. Place the test specimen on the specimen support (4.3) in the middle of the oven.

6.4 After 15 min, remove the test specimen from the oven and condition it for 24 h in accordance with ISO 2419.

6.5 Measure the length and width of the marked area on the test specimen as in 6.2 and calculate the new area A_t.

7 Expression of results

7.1 Calculate the percentage loss in area (shrinkage) S_A from the equation

$$S_A = \frac{A_n - A_t}{A_n} \times 100$$

where

$$A_n = K \times L$$

$$A_t = k \times l$$

and

$$K = \frac{\overline{AB}_n + \overline{CD}_n}{2}$$

$$k = \frac{\overline{AB}_t + \overline{CD}_t}{2}$$

$$L = \frac{\overline{AC}_n + \overline{BD}_n}{2}$$

$$l = \frac{\overline{AC}_t + \overline{BD}_t}{2}$$

the subscript n being used to indicate distances measured before the specimen is heated and the subscript t to indicate distances measured after heating and conditioning.

7.2 Assess visually any change in shape of the specimen, such as distortion.

7.3 Assess manually any change in flexibility of the specimen.

8 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 and the sampling position used, as well as the size of the test specimen and the distance of the measurement points from the edge;

c) the conditions (time and temperature) under which the test was performed;

d) the percentage loss in area of the test specimen;

e) any change in shape or flexibility observed;

f) details of any deviations from the procedure.

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