INTERNATIONAL STANDARD

ISO 5433

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Leather — Bovine wet blue — Specification

Cuir — Peaux de bovins à l'état «bleu humide» — Spécifications

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 5433 was prepared by Technical Committee ISO/TC 120, *Leather*, Subcommittee SC 2, *Tanned leather*.

Annex A forms an integral part of this International Standard. Annex B is for information only.

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Leather — Bovine wet blue — Specification

1 Scope

This International Standard specifies requirements, methods of sampling and methods of test for wet blue leather produced from bovine hides and parts of bovine hides tanned without hair and with the use of basic chromium sulfate as the primary tanning agent.

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 3380:1975, *Leather — Determination of shrinkage temperature.*

ISO 4045:1975, *Leather — Determination of pH.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1
cured
preserved temporarily from putrefaction until it can be tanned

NOTE Any method of curing, including wet or dry salting or drying, is included.

3.2
pigmentation
colouration produced by fungi growing on wet blue chrome leather

NOTE The colouration produced by fungi will normally be black, white, green or yellow but can also be pink or violet.

3.3
belly
the part of the hide covering the underside and part of the legs of the animal

3.4
dosset
double back the part of the hide remaining after the belly has been removed

3.5
shoulder
the fore part of the hide covering the shoulders and the neck of the animal, with or without the head

3.6
butt
the part of the hide remaining after the belly and shoulder have been removed

3.7
side
half a whole hide with offal (head, shoulder and belly) attached, obtained by dividing it along the line of the backbone

3.8
culatta
the rear part of a bovine hide, comprising the butt, the belly middles and the hind shanks

3.9
front
the fore part of a bovine hide, consisting of the shoulders and fore shanks

4 Requirements

4.1 Raw material

Bovine wet blue leather shall be processed from cured or fresh hides or part hides.

4.2 Form and trimming

4.2.1 Bovine wet blue leather shall be in one or more of the following forms, as specified by the purchaser:

a) whole hides;

b) bellies;

c) dossets (double backs);

d) shoulders;

e) butts;

f) sides;

g) culattas;

h) fronts.

4.2.2 The trim shall be as agreed between supplier and purchaser.

4.3 Tanning

After pretanning operations, bovine hides or part hides shall be tanned with basic chromium sulfate as the primary tanning agent. The cut cross-section shall be such that the hide is completely penetrated by the bluish colour of the chromium sulfate when examined visually. Tanning shall be carried out at a pH of 3,0 or above.

4.4 Fungicidal additives

Fungicides shall be used to inhibit mould growth in bovine wet blue leather.

NOTE 1 The fungicides used to inhibit mould growth and pigmentation should be effective and should not cause a health hazard. The types of fungicide used and their dosage should preferably be agreed between the purchaser and the supplier.

NOTE 2 Fungicides should preferably be applied in quantities appropriate to ensure storage for up to 4 months at the temperature and humidity prevailing during storage or transportation. The effectiveness of the fungicidal treatment may be determined using one of the references given in annex B.

4.5 Presentation

Bovine wet blue leather shall be well fleshed, and the grain side shall be free from hair, including short hair and fine hair. The size and grading shall be as agreed between the interested parties.

NOTE The wet blue leather should preferably have a tight grain and be free from creases, drum folds and stains caused by iron salts. At least 95 % of the number of pieces in a lot should be free from stains caused by chromium salts, and the aggregate of the stained area in any one piece should not exceed 10 % of the total area of the piece.

4.6 Shrinkage temperature

The shrinkage temperature shall meet the requirement for either low chrome tannage or full chrome tannage given in table 1, when determined using the method given in ISO 3380.

Table 1 — Shrinkage temperature

Tannage	Shrinkage temperature
Low chrome tannage	minimum 85 °C
Full chrome tannage	minimum 100 °C

NOTE Wet blue leather with a low chrome tannage (sometimes called a slack tannage) would be suitable for end uses where, for example, there would be heavy rechroming or retannage.

4.7 Chemical requirements

Bovine wet blue leather shall comply with the requirements given in table 2.

Table 2 — Chemical requirements

Characteristic	Requirement
Moisture content, % (m/m)	As agreed between the interested parties
pH of water extract (minimum)	3,5

NOTE A minimum shrinkage temperature of 85 °C would normally require a minimum chromic oxide content of 1,0 % relative to the dry mass, as determined by the method given in IUC 8, *Determination of the chromic oxide content of leather*. Similarly, a minimum shrinkage temperature of 100 °C would require a minimum chromic oxide content of 3,5 %.

5 Sampling

5.1 Sampling for routine testing

The number and location of laboratory samples taken for routine testing shall be as agreed between the interested parties.

5.2 Sampling in cases of dispute

The number of samples shall be as given in table 3 and the location shall be as specified in ISO 2418.

Table 3 — Number of samples to be taken in cases of dispute

Number of hides or pieces	Number of samples
up to 100	3
101 to 300	4
301 to 500	5
501 to 700	6
701 and over	7

5.3 Preparation of samples

Prepare samples by wiping off excess water and by keeping wrapped in filter paper for 30 min without applying any extra pressure.

6 Methods of test

6.1 Visual tests

Examine the bovine wet blue leather for uniformity of colour of the surface, penetration of chromium sulfate, absence of short hair and cleanness of the flesh side.

6.2 Shrinkage temperature

Determine the shrinkage temperature by the method specified in ISO 3380.

6.3 Moisture content

Determine the moisture content by the method specified in annex A.

6.4 pH of water extract

Determine the pH of a water extract by the method specified in ISO 4045.

6.5 Effectiveness of fungicide

The effectiveness of the fungicide used may be determined, if required, using one of the references given in annex B.

7 Packaging and marking

7.1 Packaging

Bovine wet blue leather shall be packaged suitably as agreed between the interested parties so as to preserve their original wet condition.

7.2 Marking

The following particulars shall be marked on each package or on a label attached to the package:

a) the type of material (i.e. bovine wet blue), and the trade name or brand name, if any;

b) the name and address of the manufacturer;

c) the month and year of tanning;

d) the number of hides or pieces;

e) any other details desired by the purchaser.

Annex A
(normative)

Determination of moisture content

A.1 Apparatus

A.1.1 Flat, shallow weighing vessels, with ground-glass stoppers, or **shallow**, open dishes.

NOTE Small weighing vessels with ground-glass stoppers allow more accurate work than open dishes.

A.1.2 Oven, fitted with a fan and a regulator, capable of maintaining the temperature at 102 °C ± 2 °C.

A.1.3 Suitable desiccator.

A.1.4 Analytical balance.

A.2 Sampling

A.2.1 Sample in accordance with clause 5 of this International Standard.

A.3 Procedure

A.3.1 Place a sample on a non-absorbent surface and chop manually into pieces not exceeding 5 mm square.

A.3.2 Accurately weigh about 3 g of the sample to the nearest 1 mg into a tared weighing vessel (A.1.1) and dry at 102 °C ± 2 °C for 5 h.

A.3.3 Cool the vessel and contents for 30 min in the desiccator and reweigh.

A.3.4 Repeat the drying, cooling and weighing, but with a drying time of only 1 h, until either the further loss in mass does not exceed 3 mg (i.e. 0,1 % of the original mass) or the total drying time equals 8 h.

A.3.5 Record the final mass of the weighing vessel and test portion, and calculate the mass of the dried test portion.

A.4 Expression of results

A.4.1 Calculation

Calculate the moisture content M, expressed as percentage by mass, using the following equation:

$$M = \frac{m_0 - m_1}{m_0} \times 100$$

where

m_0 is the mass, in g, of the test portion before drying;

m_1 is the mass, in g, of the test portion after drying.

A.4.2 Repeatability

The results of duplicate determinations carried out by the same operator in the same laboratory should normally not differ by more than 0,5 % (*m*/*m*), calculated relative to the original mass of the test portion.

A.5 Test report

The test report shall include the following particulars:

a) a reference to this International Standard;

b) all details necessary for complete identification of the sample;

c) the mean value of the results obtained, rounded to the first decimal place;

d) details of any special circumstances which may have affected the results.