INTERNATIONAL STANDARD

ISO 5433

Third edition
2022-11

Leather — Bovine wet blue — Specification

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

Reference number
ISO 5433:2022(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 5433:2013), which has been technically revised.

The main changes are as follows:

— sample preparation method has been added in 6.3 and 6.4;

— determination of matter soluble in dichloromethane has been added as 6.6 in the Test methods;

— type of material has been mentioned in 7.2 (a);

— normative references have been updated.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Leather — Bovine wet blue — Specification

1 Scope

This document specifies requirements, sampling methods and testing methods 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 documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2418, *Leather — Chemical, physical and mechanical and fastness tests — Sampling location*

ISO 3380, *Leather — Physical and mechanical tests — Determination of shrinkage temperature up to 100 °C*

ISO 4044:2017, *Leather — Chemical tests — Preparation of chemical test samples*

ISO 4045, *Leather — Chemical tests — Determination of pH and difference figure*

ISO 4048, *Leather — Chemical tests — Determination of matter soluble in dichloromethane and free fatty acid content*

ISO 4684, *Leather — Chemical tests — Determination of volatile matter*

ASTM D4576, *Standard test method for mold growth resistance of wet blue*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
cured
preserved temporarily from putrefaction until it can be tanned

Note 1 to entry: 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 1 to entry: The colouration produced by fungi will normally be black, white, green or yellow but can also be pink or violet.

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

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

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

3.6
butt
part of the hide remaining after the belly and the 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
rear part of the bovine hide, comprising the butt, the belly middles and the hind shanks

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

4 Requirements

4.1 Raw material

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

4.2 Form and trimming

4.2.1 Bovine wet blue hide 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 the 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 growths in bovine wet blue leather.

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

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.

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.

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 requirements 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

4.7 Chemical requirements

Bovine wet blue leather shall conform with the requirements given in Table 2. The sample should be cut into small pieces without conditioning, in accordance with ISO 4044.

Table 2 — Chemical requirements

Characteristic	Requirement
Volatile matter	>50 % of dry mass of leather or as otherwise agreed between the interested parties
Matter soluble in dichloromethane	<2 % of dry mass of leather or as agreed between the interested parties
pH of water extract	≥3,2
A minimum shrinkage temperature of 85 °C normally requires minimum chromic oxide content of 1,0 % relative to the dry mass, as determined by the method given by ISO 5398-1. Similarly, a minimum shrinkage temperature of 100 °C requires minimum chromic oxide content of 3,5 %. NOTE Regulations on chemical substances can differ from country to country.	

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 case 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 skins	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 keeping wrapped in filter paper for 30 min without applying any extra pressure.

6 Test methods

6.1 Visual tests

Examine the bovine wet blue hide 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 Volatile matter

Determine the volatile matter by the method specified in ISO 4684. Sample preparation shall be done in accordance with ISO 4044:2017, 5.2.

6.4 pH of the water extract

Determine the pH of the water extract by the method specified in ISO 4045. Sample preparation shall be done in accordance with ISO 4044:2017, 5.2.

6.5 Effectiveness of the fungicide

Determine the effectiveness of the fungicide by the method specified in ASTM D4576.

6.6 Determination of matter soluble in dichloromethane

Determine the matter soluble in dichloromethane by the method specified in ISO 4048. Sample preparation shall be done in accordance with ISO 4044:2017, 5.2.

7 Packaging and marking

7.1 Packaging

Bovine wet blue leathers 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. wet blue bovine skin), and the trade name or brand name, if any;

b) the name and address of the manufacturer;

c) the month and year of the tanning;

d) the number of skins;

e) any other details desired by the purchaser.

Bibliography

[1] ISO 5398-1, *Leather — Chemical determination of chromic oxide content — Part 1: Quantification by titration*