
**Leather — Full chrome upper leather
— Specification and test methods**

Cuir — Cuir à dessus entièrement chromé — Spécifications et méthodes d'essai

STANDARDSISO.COM : Click to view the full PDF of ISO 20942:2019



STANDARDSISO.COM : Click to view the full PDF of ISO 20942:2019



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Characteristics	3
4.1 Physical characteristics.....	3
4.2 Chemical characteristics.....	6
5 Sampling	6
6 Packaging and marking	6
6.1 Packaging.....	6
6.2 Marking.....	6
Bibliography	7

STANDARDSISO.COM : Click to view the full PDF of ISO 20942:2019

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*.

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.

Introduction

Leather is widely used in the footwear industry. Although different tanning agents can be used to produce leather, chromium III is still the most important agent in the tanning of leather for footwear. This document specifies requirements for various types of full chrome upper leather which are used in the footwear industry.

STANDARDSISO.COM : Click to view the full PDF of ISO 20942:2019

STANDARDSISO.COM : Click to view the full PDF of ISO 20942:2019

Leather — Full chrome upper leather — Specification and test methods

1 Scope

This document specifies requirements, methods of test and methods of sampling for full chrome upper leather. This document is applicable to upper leather which is used in general purpose sports footwear, school footwear, casual footwear, men's town footwear, women's town footwear, cold weather footwear, fashion footwear, infants' footwear and indoor footwear.

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 2588, *Leather — Sampling — Number of items for a gross sample*

ISO 3376, *Leather — Physical and mechanical tests — Determination of tensile strength and percentage extension*

ISO 3377-2, *Leather — Physical and mechanical tests — Determination of tear load — Part 2: Double edge tear*

ISO 3379, *Leather — Determination of distension and strength of surface (Ball burst method)*

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

ISO 5402-1, *Leather — Determination of flex resistance — Part 1: Flexometer method*

ISO 11640, *Leather — Tests for colour fastness — Colour fastness to cycles of to-and-fro rubbing*

ISO 11642, *Leather — Tests for colour fastness — Colour fastness to water*

ISO 14268, *Leather — Physical and mechanical tests — Determination of water vapour permeability*

ISO 17070, *Leather — Chemical tests — Determination of tetrachlorophenol-, trichlorophenol-, dichlorophenol-, monochlorophenol-isomers and pentachlorophenol content*

ISO 17075-1, *Leather — Chemical determination of chromium(VI) content in leather — Part 1: Colorimetric method*

ISO 17075-2, *Leather — Chemical determination of chromium(VI) content in leather — Part 2: Chromatographic method*

ISO 17226-1, *Leather — Chemical determination of formaldehyde content — Part 1: Method using high performance liquid chromatography*

ISO 17229, *Leather — Physical and mechanical tests — Determination of water vapour absorption*

ISO 17234-1, *Leather — Chemical tests for the determination of certain azo colorants in dyed leathers — Part 1: Determination of certain aromatic amines derived from azo colorants*

ISO 17234-2, *Leather — Chemical tests for the determination of certain azo colorants in dyed leathers — Part 2: Determination of 4-aminoazobenzene*

ISO 23910, *Leather — Physical and mechanical tests — Measurement of stitch tear resistance*¹⁾

3 Terms and definitions

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

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

casual footwear

footwear designed and manufactured as suitable for out-of-work leisure and spare time activities

[SOURCE: ISO 19952: 2005, 28]

3.2

cold weather footwear

footwear designed and manufactured to give specific protection to the wearer during use in sub-zero temperatures and in ice or snow or on frozen underfoot surfaces

Note 1 to entry: Also suitable for specific cold environments.

[SOURCE: ISO 19952: 2005, 38]

3.3

fashion footwear

footwear designed and manufactured for light wear in which style is prevalent

[SOURCE: ISO 19952: 2005, 59]

3.4

general purpose sports footwear

footwear designed and manufactured as suitable for wear during a variety of non-specialist sporting activities, e.g. jogging, occasional racket sports or court games such as netball and light general training

[SOURCE: ISO 19952: 2005, 74]

3.5

indoor footwear

footwear designed and manufactured as having adequate durability and comfort for wear indoors, around the house, unsuitable for use as a town shoe and unlikely to offer protection from inclement weather or harsh wear environments

[SOURCE: ISO 19952:2005, 88]

3.6

infants' footwear

footwear designed and manufactured as suitable for everyday wear by children from size 16 to 22

Note 1 to entry: See ISO 19952: 2005, 116, "Paris point".

1) Under preparation. Stage at the time of publication: ISO/FDIS 23910:2019.

[SOURCE: ISO 19952: 2005, 89]

3.7

school footwear

footwear designed and manufactured for everyday wear at school for children and teenagers from size 23 to 38

Note 1 to entry: See ISO 19952: 2005, 116, "Paris point".

[SOURCE: ISO 19952: 2005, 129]

3.8

town footwear

footwear designed and manufactured as suitable for everyday wear at the office, for shopping or similar wear environments

Note 1 to entry: Normally durability and comfort are more important than design or fashion content with this type of footwear.

[SOURCE: ISO 19952: 2005, 161]

3.9

upper leather

leather for making the upper part of footwear

4 Characteristics

4.1 Physical characteristics

The full chrome upper leather shall meet the physical characteristics given in [Table 1](#).

STANDARDSISO.COM : Click to view the full PDF of ISO 20942:2019

Table 1 — Physical characteristics

Characteristic	Test method	General purpose sports footwear, school footwear, casual footwear, men's town footwear	Cold weather footwear	Women's town footwear	Fashion footwear, infants' footwear, indoor footwear
1 Tensile strength ^a (N/mm ²)	ISO 3376	Bovine ≥ 15 Goat ≥ 12 Sheep ≥ 10	Bovine ≥ 15 Goat ≥ 12 Sheep ≥ 10	≥ 10	≥ 10
2 Elongation at break ^a (%)	ISO 3376	Bovine: 45-75 Goat: 40-75 Sheep: 35-75	Bovine: 45-75 Goat: 40-75 Sheep: 35-75	Bovine: 45-75 Goat: 40-75 Sheep: 35-75	Bovine: 45-75 Goat: 40-75 Sheep: 35-75
3 Tear strength ^a (N)	ISO 3377-2	Bovine ≥ 70 Goat ≥ 40 Sheep ≥ 20	Bovine ≥ 70 Goat ≥ 40 Sheep ≥ 20	Bovine ≥ 60 Goat ≥ 40 Sheep ≥ 20	Bovine ≥ 50 Goat ≥ 40 Sheep ≥ 20
4 Flex resistance (cycle) ^b	ISO 5402-1	Dry: 80 000 Wet: 20 000	Dry: 20 000 (in -15 °C)	Dry: 50 000 Wet: 20 000	Dry: 12 000
6 Distension of grain at crack (mm)	ISO 3379	≥ 7	≥ 7	≥ 7	≥ 7
7 Grain crack load (N)	ISO 3379	≥ 20	≥ 20	≥ 20	≥ 20

^a Mean value of each direction (perpendicular and horizontal direction).
^b Without visible damage (no crack).
^c If unlined footwear is used inside, staining shall conform ≥ 2/3 after 40 cycles with perspiration and conform ≥ 3 after dry and wet cycles.

Key
WVP water vapour permeability
WVC water vapour coefficient

Table 1 (continued)

Characteristic	Test method	General purpose sports footwear, school footwear, casual footwear, men's town footwear	Cold weather footwear	Women's town footwear	Fashion footwear, infants' footwear, indoor footwear
8	ISO 11640	Aniline, nubuck or suede: — after 50 cycle dry and 20 cycle wet: ≥ 3 Other finishing: — after 100 cycle dry and 40 cycle wet: ≥ 3	Aniline, nubuck or suede: — after 50 cycle dry and 20 cycle wet: ≥ 3 Other finishing: — after 100 cycle dry and 40 cycle wet: ≥ 3	Aniline, nubuck or suede: — after 50 cycle dry and 20 cycle wet: ≥ 3 Other finishing: — after 100 cycle dry and 40 cycle wet: ≥ 3	Aniline nubuck, or suede: — after 50 cycle dry and 20 cycle wet: ≥ 3 Other finishing: — after 100 cycle dry and 40 cycle wet: ≥ 3
9	ISO 11642	≥ 3	≥ 3	≥ 3	—
10	ISO 14268 ISO 17229	WVP $\geq 0,8$ mg/cm ² ·h WVC ≥ 15 mg/cm ²	WVP $\geq 0,8$ mg/cm ² ·h WVC ≥ 15 mg/cm ²	WVP $\geq 0,8$ mg/cm ² ·h WVC ≥ 15 mg/cm ²	WVP $\geq 0,8$ mg/cm ² ·h WVC ≥ 15 mg/cm ²
11	ISO 23910	≥ 10	≥ 10	≥ 4	≥ 3

a Mean value of each direction (perpendicular and horizontal direction).
b Without visible damage (no crack).
c If unlined footwear is used inside, staining shall conform $\geq 2/3$ after 40 cycles with perspiration and conform ≥ 3 after dry and wet cycles.

Key
WVP water vapour permeability
WVC water vapour coefficient