

**Leather – Technical requirements dress
glove specifications**

ICS: 59.140.30

Published by Ethiopian Standards Agency
©ESA

Foreword

This Ethiopian Standard has been prepared under the direction of Technical Committee for Leather and Leather products(TC 74) and published by the Ethiopian Standards Agency (ESA).

Draft of the standard has been presented by Ethiopian Leather Industry Development Institute.

Acknowledgment has been made for the organization for its concern to contribute to the effort of national standardization.

DRAFT

Leather – Technical requirements dress glove specifications

1. Scope

This Ethiopian standard specifies the requirements for glove design and construction, innocuousness, marking and information applicable to mechanical protective gloves.

2. Normative references

The following standards contain provisions, which, through reference in this text, constitute provisions of the Ethiopian standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on the Ethiopian standards are encouraged to investigate the possibility of applying the most recent editions of the Ethiopian standard indicated below. Registers of currently valid standards are maintained in the Ethiopian Standards Agency.

ES ISO 5398-1, Leather - Determination of chromium as chromic oxide

ES ISO 4045, Leather - Chemical tests - Determination of PH

ES ISO 17075, Leather — Chemical tests — Determination of chromium (VI) content

ES ISO 17226, Leather — Chemical determination of formaldehyde content

ES ISO 3380, Leather Physical and Mechanical tests Determination of shrinkage temperature up to 100 C

ES ISO 2589, Leather - Physical and mechanical tests - Determination of thickness

ES ISO 12947-1, Textiles — Determination of the abrasion resistance of fabrics by the Martindale method

—Part 1: Martindale abrasion testing apparatus

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

ES ISO 13996, protective clothing -- mechanical properties -- determination of resistance to puncture

ES ISO 13997, protective clothing -- mechanical properties -- determination of resistance to cutting by sharp objects

ES EN 407, protective gloves against thermal risks heat and/or fire

3. Terminologies

For the purpose of this standard the definitions in ES 1180 shall apply. A glove is an item of personal protective equipment which protects the hand or any part of the hand from hazards. It may also cover part of the forearm and arm.

4. Types

There are several types of gloves. These include gloves designed for very specialist application, such as electrician's or surgical gloves, those that give protection from chemical and micro-organisms, mechanical risks, thermal hazards, cold radioactive contamination and ionizing radiation, and manual metal welding.

5. Requirements

5.1. General

5.1.1. Raw material Description: - the material for Protection glove shall be from preserved or fresh skin or hide.

5.1.2. Manufacturing Norm: - both the industrial and dress glove shall be produced using standard manufacturing process or operations designing, material cutting and preparation operations, assembling operations, finishing and packing.

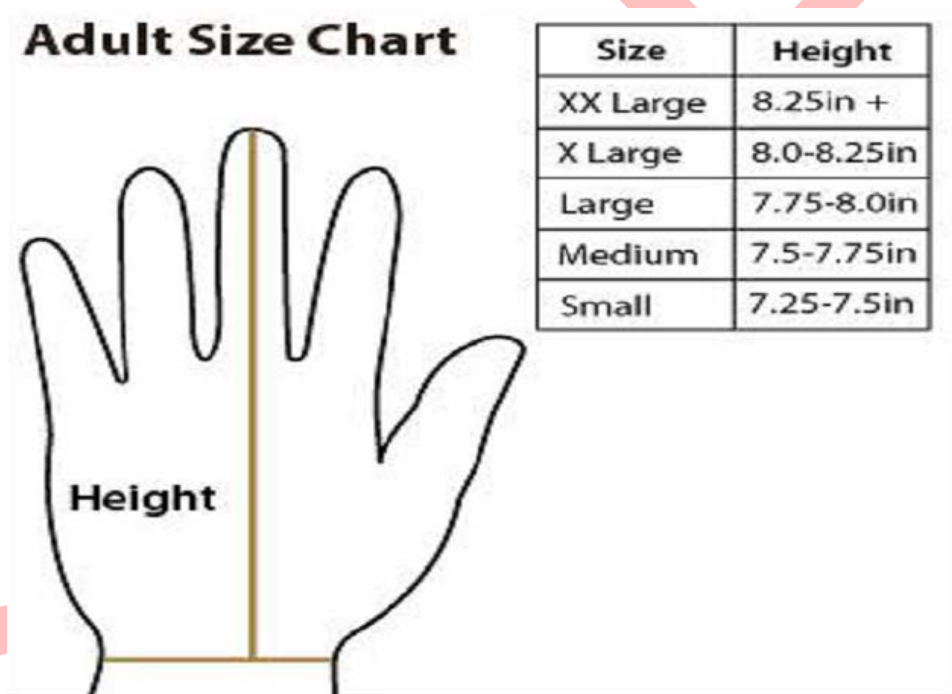
5.2. Design and construction

Glove has to offer the greatest possible degree of protection in the foreseeable conditions of end use. When seams are included, the strength of these seams should not reduce the overall performance of the glove. The gloves themselves shouldn't cause any harm to the user.

5.3. Sizing

Glove sizing can be determined by hand measurements as indicated in the figure below. The glove sizing of adult shall be specified as the table 1 below.

Table 1- glove sizing



5.4. Chemical requirements

Industrial and dress glove leather when tested according to the relevant methods of test, shall conform to chemical requirements specified in table 2 below.

Table 2 chemical requirement of dress glove leather

S/N	Characteristic	Requirement		Method of test
		Industrial glove	Dress glove	
1	Total ash % (over Cr_2O_3), max.	2.0	2.0	ES ISO 4047
2	Chromium content (as Cr_2O_3), % by mass m	2.0	2.0	ES ISO 5398-1
3	Solvent extractable substance % by mass	10-18	16-18	ES ISO 4048
4	PH value of aqueous extract min.	3.5	3.5	ES ISO 4045
5	Loss by washing % by mass max.	2.0	2.0	

5.5. Physical requirement

Industrial and dress glove leather when tested according to the relevant methods of test, shall conform to physical requirements specified in table 3 below

Table 3 - Physical requirement of dress glove leather

S/N	Characteristic	Requirement		Method of test
		Industrial glove	Dress glove	
1	Shrinkage temperature $^{\circ}\text{C}$, at the wet blue stage, min.	90	90	ES ISO 3380
2	Thickness in mm	0.9-1.1	0.35-0.6	ES ISO 2589
3	Tensile strength, N/mm^2 min.	20	20	ES ISO 3376
4	Elongation at break, % max.	50	60	ES ISO 3376
5	Tear strength, N min.	30	30	ES ISO 3377-2
6	Martindale Abrasion Res. a) Dry 4000 b) Wet 2000	No worse than moderate wear	No worse than moderate wear	ES ISO 12947-1
7	Puncture resistance, N min.	20	-	ES ISO 13996
8	Blade cut resistance (factor)	1.2	-	ES ISO 13997
9	Heat resistance (100 – 500 $^{\circ}\text{C}$)	No pain at least for seconds	-	ES ISO 17227
10	Colour fastness to light, min. rating blue scale	4	4	ES ISO 105-B02
11	Water absorption after 60 minute, % by mass max.	- 25		

5.6. Hazardous chemical requirements

The leather shall conform to the requirements given below in table 4, when tested accordance with the methods prescribed in table 4.

Table 4 - hazardous chemical requirements

Characteristics requirements		Method of test
Formaldehyde, ppm max.	300	ESISO 17226-1
Pentachlorophenate, ppm max.	5	ESISO 17070
Azo-dyes(sum parameters), ppm, max.	30	ESISO 17234-2
Hexavalent chromium, ppm, max.	3	ESISO 17075-1/-2

6. Sampling

Sampling shall be carried out in accordance with ES ISO 2418, ES ISO 2419 ES ISO 2588 and ES ISO 4044

7. Packing and marking

7.1. Packing

Both Industrial and dress glove shall be placed in polypropylene plastic bags or wrapped in them as agreed to between the purchaser and producer.

7.2. Marking/labeling

Each container of industrial and dress glove shall be labeled with the following information.

- The name and address of manufacturer's;
- Name of the country;
- The number of pieces
- Size
- Batch number(s) or code number
- Product colour
- And any other labeling information required by the purchaser.

Organization and Objectives

The Ethiopian Standards Agency (ESA) is the national standards body of Ethiopia established in 2010 based on regulation No. 193/2010. ESA is established due to the restructuring of Quality and Standards Authority of Ethiopia (QSAE) which was established in 1998.

ESA's objectives are:-

- ❖ Develop Ethiopian standards and establish a system that enable to check whether goods and services are in compliance with the required standards,
- ❖ Facilitate the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.

Ethiopian Standards

The Ethiopian Standards are developed by national technical committees which are composed of different stakeholders consisting of educational institutions, research institutes, government organizations, certification, inspection, and testing organizations, regulatory bodies, consumer association etc. The requirements and/or recommendations contained in Ethiopian Standards are consensus based that reflects the interest of the TC representatives and also of comments received from the public and other sources. Ethiopian Standards are approved by the National Standardization Council and are kept under continuous review after publication and updated regularly to take account of latest scientific and technological changes. Orders for all Ethiopian Standards, International Standard and ASTM standards, including electronic versions, should be addressed to the Documentation and Publication Team at the Head office and Branch (Liaisons) offices. A catalogue of Ethiopian Standards is also available freely and can be accessed in from our website.

ESA has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of ESA.

International Involvement

ESA, representing Ethiopia, is a member of the International Organization for Standardization (ISO), and Codex Alimentarius Commission (CODEX). It also maintains close working relations with the international Electro-technical Commission (IEC) and American Society for Testing and Materials (ASTM). It is a founding member of the African Regional Organization for standardization (ARSO).

More Information?

Contact us at the following address.

The Head Office of ESA is at Addis Ababa.

☎ 011- 646 06 85, 011- 646 05 65

☎ 011-646 08 80

✉ 2310 Addis Ababa, Ethiopia

E-mail: info@ethiostandards.org,

Website: www.ethiostandards.org



Standard Mark