

**ETHIOPIAN
STANDARD**

ES 6817:2021

First edition
xx-xx-2021

Leather-Vegetable tanned specification

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).

In preparing this Ethiopian Standard reference has been made to the following:
IS 581:1976, "Leather-Vegetable tanned specification ", published by the Bureau of Indian standards.

Acknowledgement is made for the use of information from the above publication.

Leather-Vegetable tanned specification

1. Scope

This standard intended to prescribe the requirements and the methods sampling and testing for vegetable tanned leathers.

2. Normative reference

The following referenced documents are indispensable for the application of this Ethiopian standard only the latest edition of the documents (including any amendments) shall be applicable.

ES 1180, Leather – Terminology

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

ES ISO 3376, Leather — Physical and mechanical tests — Determination of tensile strength and percentage elongation

ES ISO 2417, Leather — Physical and mechanical tests — Determination of the static absorption of water

ES ISO 4047, Leather — Determination of sulphated total ash and sulphated water-insoluble ash

ES 1192, Leather - Determination of double hole stitch tear strength

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

ES ISO 5397, Leather -Determination of nitrogen content and “hide substance” Titrimetric methods

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

ES 1194, Leather-Determination of bound organic substances and degree of tannage

ES ISO 17226(part 1-3), Leather — Chemical determination of formaldehyde content

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

ES ISO 17234(part 1-2), Leather — Chemical tests for the determination of certain azo colourants in dyed leathers

ES ISO 17075(part 1-2), Leather — Chemical determination of chromium(VI) content in leather

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

ES ISO 2419, Leather — Physical and mechanical tests — Sample preparation and conditioning

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

ES ISO 4044, Leather — Chemical tests — Preparation of chemical test samples

3. Terminology

For the purpose of this standard, the definitions given in ES 1180 shall apply.

4. Requirements

4.1. Raw material: the material shall be fresh or wet salted sheep, goat and hide.

4.2. Tanning

4.2.1. General

Vegetable tannage, which is known as the one of the oldest tanning methods, is being carried out by using phenolic materials extracted from certain type and part of plants. The hide/ skin shall be tanned with natural vegetable tanning material or either of these in combination with syntan. Vegetable tanning materials are generally used in production of distinguishing properties associated with body and weighted, fullness, roundness, firmness and rigid leathers which are used in production of saddlery, harness, belt, shoe upper and sole leather. The general principle of vegetable tanning followed by the tanners is that tan liquor blended according to individual requirement is run counter current to the delimed or bated pelts. The PH of vegetable tanning shall be within the range of 3.8 -4.2. The process of main tanning is carried out by drumming method very careful control in the period of drumming is necessary. The constituent used in tannage of vegetable tanning agents is tannin (vegetable extracts). Tannin usually shall contain polyatomic phenols and related organic groups.

4.2.2. Fungicide

Fungicide is used at the end of tanning operation and before drying, suitable fungicides shall be incorporated in required proportions. Fungicide used to promote mildew resistance in the leather shall be effective and non-toxic.

4.3. Physical requirements

4.3.1. The physical requirement of vegetable tanned leather shall apply as specified in the table 1 below.

Table 1 - physical requirements

Characteristics/parameters	Requirement	Test methods
Shrinkage temperature, min	70°C	ES ISO 3380
Tensile strength kg/cm ² , min	200	ES ISO 3376
Elongation at break %, min	35-80	ES ISO 3376
Water absorption%, by mass, max, a) in 30 minute, b) in 2 hours, c) in 24 hours,	45 50 55	ES ISO 2417

4.4. chemical requirements

4.4.1. The leather shall apply with the chemical requirements of the following products in the table 2 below.

Table 2 - chemical requirements

Characteristics	Requirements	Methods of test
Total ash % by mass, max.	3	ES ISO 4047
Water soluble matter % by mass, max.	18	ES 1191
Solvent extractable substance % by mass	3-7	ES ISO 4048
Hide substance % by mass, min.	40	ES ISO 5397
PH of water soluble aqueous extract, min.	3.5	ES ISO 4045
Different figure, max.	0.7	ES ISO 4045
Degree of tannage, min.	50	ES 1194
Loss by washing%, max.	8	-

4.5. Hazardous chemical requirements

The leather shall conform to the requirements given below in table 3, when tested accordance with the methods prescribed in table 3.

Table 3 - hazardous chemical requirements

Characteristics	requirements	Method of test
Formaldehyde, mg/kg, max.	150	ES ISO 17226
Pentachlorophenolate, mg/kg, max.	5	ES ISO 17070
Azo-dyes (sum parameters), mg/kg, max.	30	ES ISO 17234
Hexavalent chromium, mg/kg, max.	3	ES ISO 17075

5. Sampling

Sampling of vegetable tanned leather should be carried out in accordance to the method of test specified in ES ISO 2418, ES ISO 2419, ES ISO 2588, ES ISO 4044.

6. Packing and Marking

6.1. Packing

The leather shall be packaged suitably as agreed between the interested parties in such a way that it is protected from, for example, humidity, heat and light.

6.2. Marking /Labeling

The packages of vegetable tanned leather shall be marked or labeled with the following information:

- a) Name of manufacturer
- b) Type and grade of leather
- c) No. of pieces of leather
- d) Batch number ;and
- e) Any other required information

DRAFT

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