
**Specification for vegetable tanned
leather for belting**

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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 2954:1978, "Specification for vegetable tanned leather for belting ", published by the Bureau of Indian standards.

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

Specification for vegetable tanned leather for belting

1. Scope

This standard prescribes the requirements and the methods of sampling and test for vegetable tanned leather used for flat and round leather beltings.

2. Normative references

The following referenced documents are indispensable for the application 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.

ES 1180, ES 1180 , Leather –Terminology

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

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

ES ISO 4045, Leather — Chemical tests — determination of ph and difference figure

ES ISO 5397, Leather — determination of nitrogen content and "hide substance" — titrimetric method

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

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

ES ISO 3377-2, Leather — Physical and mechanical tests — determination of tear load — part 2: double edge tear

ES ISO 3379, Leather — Determination of distension and strength of surface (ball burst method)

ES ISO 17226, Leather — Chemical determination of formaldehyde content — part 1: method using high-performance liquid chromatography

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

ES ISO 17234 Leather — Chemical tests for the determination of certain azo colourants in dyed leathers

ES ISO 17075-2, Leather — Chemical determination of chromium(vi) content in leather — part 2: chromatographic method

3. Terms and Definitions

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

3.1.

temporary elongation

The difference between the length of the stretched specimen and its initial length, expressed as a percentage of the original length.

3.2.

Permanent Elongation

The residual increase in length of the test piece expressed as a percentage of the original length after subjecting it to a specified stress for a specified period.

4. Requirements

4.1. Raw Material

The material shall be good quality wet-salted or green slaughtered hides of good substance. They shall be particularly free from defects, such as flay cuts, putrefaction and warble holes.

4.2. Tanning

The butts shall be tanned with vegetable tanning materials or synthetic tanning materials or a mixture of the two. Mineral acids shall not be used for plumping the hides either in pretanning stage or during tanning. A cut section of the leather made by knife shall be smooth showing that the inside fiber is compact and fully tanned.

4.3. Scouring and Washing

The tanned butts shall be scoured and washed on the grain and flesh sides neatly and may be skived or shaved on the flesh side to remove all traces of loose fiber.

4.4. Stuffing

The stuffing materials shall be fish oil, tallow, or other oils, fats or waxes of suitable quality.

4.5. Oiling

The tanned leather shall be oiled with animal or vegetable oil of suitable quality.

4.6. Setting

During the currying process, the butts shall be uniformly well set out so as to minimize stretch and to give a smooth finish to the grain (hair) side.

4.7. Seasoning (Ageing)

After the stuffing process is complete, the butts shall be laid down to season for a minimum period of eight weeks.

4.8. Stretching

The leather after stuffing may be set out and/or stretched to remove the stretch and the stretcher marks, if any, be cut off. The stretching shall be from neck to butt along the backbone line. The damp butts shall be dried in the stretched condition.

4.9. Finishing

The strap butts or bends shall be finished on the grain and flesh sides and the thin protective layer of grease left during the period of seasoning shall be removed the leather surface. In doing so, no damage shall be done to the grain side shall not be dope finished, but light staining is permissible.

4.10. Chemical Requirements

The leather shall comply with the chemical requirements given in Table 1 when tested in accordance with the methods referred to specify in the table 1.

Table 1 chemical requirement for leather for belting

Characteristics/ parameters	Requirement	Method of test
Total ash, percent by mass, Max	2.5	ES ISO 4047
Solvent extractable substances, percent by mass	5 to 7	ES 13592
Water soluble matter, percent by mass max.	16.0	ES ISO 4048
Insoluble ash, percent by mass, Max	1.0	-
pH of water soluble	3.5 to 4.5	ES ISO 4045
Different number, Max	0.6	ES ISO 4045
Glucose, percent by mass, Max	2.25	-
Hide substance, percent by mass, Min.	40	ES ISO 5397
Degree of tannage, percent by mass, min.	55	ES 1194

NOTE- Calculation of requirements for characteristics shall be done on zero percent moisture basis. The moisture content shall be determined in accordance with ES ISO 3344

4.11. Physical Requirements:

The material shall comply with the physical requirements given in Table 2 when tested in accordance with the methods specified in table 2.

Table 2 physical requirements for leather for belting

Characteristic/ parameter	Requirement	Method of test
Tensile strength, N/mm ² , Min	20.6	ES ISO 3376
Temporary elongation, percent, max.	6	ES ISO 3376
Permanent elongation, percent, max.	2	ES ISO 3376
Stitch tear resistance, thickness, N/mm, Min	83.4	ES ISO 3377-2
Grain strength	Grain strength shall not crack	ES ISO 3379

4.12. 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

Characteristic	Requirement	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

4.13. Protection against mildew –

The material when tested according to the method ES 1193 shall not show any growth of mildew.

5. Sampling

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

6. Packing and Marking

6.1. Packing

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

6.2. Marking

The packages shall be marked with the following information:

- a) Name of the material,
- b) Number of pieces or quantity;
- c) Manufacturer's name or recognized trade-mark, if any, or both; and
- d) Month and year of manufacture.

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- ❖ 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.

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