
Specification for wax-emulsion for leather finishing

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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 11987:1986, "Specification for wax-emulsion for leather finishing ", published by the Bureau of Indian standards.

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

Specification for wax-emulsion for leather finishing

1. Scope

This standard prescribes the requirements, and methods of sampling and test for wax-emulsion for leather finishing.

2. Normative reference

No reference is required.

3. Terms and Definitions

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

4. Requirements

- 4.1. Description** The material shall be manufactured from hard or soft bleached waxes emulsified with suitable emulsifying agent. The material shall be a viscous liquid or an aqueous colloidal dispersion of waxes and other suitable material required for the purpose. It shall be free from gritty material and mould growth.
- 4.2. Sediment** -The material shall not contain more than one percent sediment, when tested as prescribed in Annex A.
- 4.3. Stability** - The material shall be stable emulsion. It shall exhibit no gelling, creaming which is dispersible on freezing when kept in closed containers at any temperature between 10 to 50°C.
- 4.4. Thickness** -The dried surface of the leather piece shall be non-tacky, when tested as prescribed in Annex B.
- 4.5. Emulsion Characteristics** -The material shall form a ready emulsion in hot or cold water in any dilution.
- 4.6.** The material shall also comply with the requirements given in Table 1.

Table 1 - requirement for wax-emulsion for leather finishing

S. No	Characteristic	Requirements	Test Method (Annex)
1	Total solid content of the material, percent by mass, Max	20.0	C
2	Melting point of the total solid in °C, Min	55	D
3	Ash content of the total solid, percent by mass, Max	1.0	E

5. Sampling

- 5.1.** The method of drawing representative samples for tests and the criteria for conformity shall be as prescribed in Annex F.

6. Packing and Marking

- 6.1. Packing** - The material shall be packed in glass or plastic containers or other containers as agreed to between the purchaser and the manufacturer.
- 6.2. Marking** - The following particulars shall be clearly indicated on the outside of the containers:
- Manufacturer's name and/or its trade-mark, if any;
 - Net mass of the material;
 - Name of the material;
 - Batch/Code number; and
 - Month and year of manufacture.

Annex A

Determination of sediment

A-1 Procedure

A-1.1 Shake the material (about 200 ml) well to get a homogeneous mixture. Take a suitable volume of the material and filter through a sintered glass crucible or a Whatman filter paper No. 42 or its equivalent with proper stirring. Dry the residue to constant mass at $100 \pm 5^{\circ}\text{C}$. Alternatively, centrifuge a suitable volume of the material for 15 minutes at approximately 4000 rev/min. Decant all the supernatant layer and transfer the sediment to a filter paper or crucible. Dry to constant mass at $100 \pm 5\%$. Express the results in percentage mass per volume basis.

Annex B

Determination of tackiness

B-1. Procedure

B-1.1 Leather upper piece of size 200 x 200 mm shall be used for testing. Clean the grain surface with a cloth or brush to remove any adhering dust particles. Apply the emulsion in a film to the smooth grain surface using a rag or brush, after two minutes place the leather piece which has been allowed to dry 5 to 10 minutes on the pan of a suitable physical balance and counterpoise it with weights. Place an additional weight of 2'5 kg and press the treated surface with thumb till the two pans of the balance are counterpoised. Keep the thumb in this position for one minute and then slowly release.

B.1.2 There shall be no sign of stickiness of the thumb. The thumb impression, if produced, shall be such that it shall be wiped out with a cloth or brush.

Annex C

Determination of total solid content

C-1. Procedure

C-1.1 Weigh about 20 g of the material in a stainless steel, glass or porcelain container of not more than 10 cm diameter with a lid. Place the container on a steam-bath without the lid till the bulk of volatile matter is evaporated off. Dry the residue at 100 f 5°C in an oven for 4 h hours or more. Cool in a desiccators and weigh. Repeat the heating, cooling and weighing till two consecutive readings at an interval of one hour are constant.

C-2. Calculation

C-2.1 Total solid content, percent by mass = $100 \times M_2/M_1$

Where

M_2 , = mass in g of the residue after drying, and

M_1 = mass in g of the material taken for the test.

Annex D

Determination of Melting Point

D-1. Procedure

D-1.1 Fill a capillary tube with a few milligrams of the total solid as obtain in C-1.1 so that a column of the material about 5 mm high is obtained. Pack the material by tapping lightly on a rigid surface and determine the melting point in any standard melting point apparatus with a thermometer graduated at each 0.1°C.

Annex E

Determination of ash content of total solid

E-1 Procedure total solid

E-1.1 Weigh about 20 g of the material in a nickel or stainless-steel crucible (60 to 80 ml capacity) and evaporate on a steam-bath. Put the crucible in a muffle furnace and raise temperature gradually. Raise the temperature of the furnace from red hot to 700 to 800 °C and heat for about two hours. Cool in a desiccators and weigh.

E-2. Calculation

E-2.1 Ash content of total solid, percent by mass = $100 \cdot M_2 / M_1$

Where

M₂, = mass in g of the ash, and

M₁ = mass in g of the total solid equivalent to the mass of material taken for the test (see C-2.1).

Annex F

Sampling of wax-emulsion for leather finishing

F-1. General requirements of sampling

F-1.0 In drawing, preparing, storing and handling test samples, the following precautions and directions shall be observed.

F-1.1 Samples shall be taken in a protected place not exposed to damp air, dust or soot.

F-1.2 The following instrument shall be clean and dry when used.

F-1.3 Precautions shall be taken to protect the samples, the material being sampled, the sampling instruments and the containers for samples from adventitious contamination.

F-1.4 The samples shall be placed in clean, dry and air-tight glass or other suitable containers on which the material has no action.

F-1.5 The sample container shall be of such a size that they are almost completely filled by the sample. F-1.6 Each sample container shall be sealed air-tight after filling and marked with full details of sampling, the date of sampling and the year of manufacture of the material.

F-1.7 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

F-2. Scale of Sampling

F-2.0 To determine conformity of a consignment of wax-emulsion to this specification, samples shall be selected so as to be representative of the whole consignment. In the absence of any prior agreement between the purchaser and the manufacturer on the mode of sampling and determining the criteria of conformity, the following sampling and inspection scheme is recommended to serve as a guide.

F-2.1 Lot - All the containers in a single consignment of the material drawn from the same batch of manufacture and belonging to the same size shall constitute a lot. If a consignment is declared or known to consist of different batches of manufacture or of different sizes of containers, the containers belonging to the same batch and size shall be grouped together and each such group shall constitute a separate

F-2.1.1 Samples shall be tested for each lot for ascertaining the conformity of the material to the requirements of the specification.

F-2.2 The number (n) of containers to be chosen from the lot (N) shall depend upon the size of the lot and shall be in accordance with col 1 and 2 of Table 2.

F-2.3 These containers shall be chosen at random from the lot, in order to ensure the randomness of selection, some random number table as agreed to between the purchaser and the manufacturer shall be used.

Table 2 Numbers of Containers to Be Selected for Sampling (Clause F-2.2)

Lot size, N	No. of containers to be chosen
up to 500	10
501 to 1000	15
1001 and above	20

F-3. Preparation of composite sample

F-3.1 Shake well each of the containers selected in F-2.2 and test for sediment content. Pour out a quantity of polish such that the total quantity obtained from all the containers provides materials (about 1000 g) sufficient for all other tests. Thoroughly mix the material drawn from all the selected containers so as to form the composite sample.

F-4. Number of Tests and Criteria for Conformity

F-4.1 Test for the determination of sediment shall be done on the original containers from which no sample has been drawn.

F-4.2 Tests for other characteristics shall be done on the composite sample.

F-4.3 The lot shall be declared as conforming to the specification, if the test results satisfy the corresponding requirements laid down in this specification.

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