

**DRAFT TANZANIA STANDARD**

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**Shoe polish wax solvent paste type — Specification**

**TANZANIA BUREAU OF STANDARDS**

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## Foreword

This Draft Tanzania Standard is being prepared by the Paints and Varnishes Technical Committee under the supervision of Chemicals Divisional Standards Committee and it is in accordance with the procedures of the Bureau.

During the preparation of this standard reference was made to Kenya Standard KS EAS 462: 2007 *Shoe polish wax solvent paste type — Specification*, published by Kenya Bureau of Standards

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value observed or calculated expressing the result(s) of a test or analysis shall, be rounded off in accordance with TZS 4.

Committee Draft - CD2

## Shoe polish wax solvent paste type — Specification

### 1. Scope

This Draft Tanzania Standard specifies requirements, sampling and test methods for shoe wax solvent type polish suitable for application to footwear and leather goods.

### 2. Normative references

The following referenced documents are indispensable for the application of this Tanzania Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

TZS 649/ISO 4317, *Surface-active agents and detergents — Determination of water content — Karl Fischer methods*

TZS 59, *Water for analytical laboratory use — Specification and test method*

TZS 524, *Paints and varnishes – sampling*

### 3. Terms and definitions

There are no terms and definition in this document

### 4. Requirements

#### 4.1 General requirements

4.1.1 The shoe polish shall be a solvent based polish, essentially consisting of a wax or blend of waxes in an organic solvent with or without colour dyes.

4.1.2 It shall be a homogenous smooth paste free from lumps and granulations.

4.1.3 It shall not be harmful to surfaces of the type to which it is intended to be applied.

4.1.4 It shall not be irritating to the skin; its vapour shall not be toxic to human beings and it shall have no disagreeable odour.

#### 4.2 Specific requirements

##### 4.2.1 Heat-cool stability

When tested in accordance with Annex A, the shoe polish shall not show signs of separation of solvent from wax.

##### 4.2.2 Applicability and tackiness

The shoe polish shall not crumble or dry too rapidly and it shall produce a non-tacky polished surface when tested in accordance with Annex B.

#### 4.2.3 Gloss

When tested in accordance with Annex C, the polish shall apply evenly and shall dry to a non-tacky film, and on buffing, the 60° specular gloss of the leather shall increase by at least 5 units, when a second quantity of polish is applied, allowed to dry and buffed, there shall be no decrease in the gloss.

#### 4.2.4 Freedom from grit

When 0.1 g of the shoe polish is rubbed between two glass slides, there shall be no evidence of grit.

#### 4.2.5 Intensity of colour

When a colour rub of the polish is carried out, the intensity of the colour produced when visually observed shall match the same colour in the shoe polish colour guide chart.

4.2.6 The shoe polish shall also comply with specific requirements given in Table 1 when tested in accordance with the test methods therein.

**Table 1 — Specific requirements for shoe polish**

S No.	Characteristic	Requirement	Test method
(i)	Softening point °C, <i>min.</i>	75	Annex D
(ii)	Non-volatile matter content, % (m/m), <i>min</i>	25	Annex E
(iii)	Penetration, units (tenths of a millimetre); a) at 20 °C	40-70	Annex F
	b) at 38 °C, <i>max</i>	80	
(iv)	Ash content (m/m), <i>max.</i>	1.0	Annex G
(v)	Water content, % (m/m), <i>max</i>	1.0	TZS 649/ISO 4317

## 5. Packaging and marking

### 5.1 Packaging

The shoe polish shall be packed in suitable corrosion resistant containers, strong enough to withstand normal usage, transportation and other kinds of contamination. It shall be so packed as to prevent leakage and deterioration of the product. The container shall be easily opened and closed.

### 5.2 Marking

The package shall be marked either in English, Kiswahili or in combination as agreed between the manufacturer and the supplier with the following information:

- a) the name of the product
- b) manufacturer's name
- c) registered trade mark if any;
- d) colour of polish
- e) net content;
- f) batch/code number;
- g) country of origin;

- h) date of manufacturer and best before date;
- i) safety precaution
- j) instructions for use and storage.

#### **6. Sampling**

Sampling shall be done in accordance with TZS 524

#### **7. Quality of reagents**

Analytical grade reagents and water for analytical use as specified by TZS 59 shall be used for the appropriate tests.

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## **Annex A**

(normative)

### **Determination of product heat - cool stability**

#### **A.1 Paste wax**

**A.1** Examine a sample of paste wax after standing in a closed container at  $15 \pm 1$  °C for 24 h, followed by 24 h at  $40 \pm 1$  °C.

**A.2** There shall be no separation of solvent from wax.

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## **Annex B**

(normative)

### **Determination for tackiness**

#### **B.1 Apparatus**

Leather shoe upper piece of size 100 × 100 mm of the same colour as the shoe polish to be tested. The leather substrate shall be smooth-grained to which the most current leather finishes have been applied at a tannery, and shall be the exact type normally used to fabricate shoes.

#### **B.2 Procedure**

**B.2.1** Clean the grain surface with a cloth or brush to remove any adhering dust particles.

**B.2.2** Apply the polish in a thin film to the smooth grain surface using a rag or brush. The polish shall not crumble or dry too rapidly. It shall produce a non-tacky polished surface without colouring the leather unduly.

**B.2.3** After application and subsequent buffing, proceed using either of the two methods prescribed below on a leather piece which has not been allowed to dry for more than 5 minutes.

##### **B.2.3.1 Method A**

Place the leather piece (B.2.3) on the pan of a suitable physical balance and counterpoise it with weights. Place an additional weight of 2.5 kg and press the polished surface with a thumb till the two pans of the balance are counterpoised. Keep the thumb in this position for one minute and then slowly release. There shall be no sign of stickiness to the thumb. The thumb impression if produced shall be such that it shall be wiped out with a cloth or brush.

##### **B.2.3.2 Method B**

Place a 75 mm square of glazed paper (Arthur H Thomas catalogue No. 7310 or equivalent) face down on the polished leather piece surface. Place a 200 g weight, 35 mm in diameter, on the centre of the paper and allow it to stand for 1 minute, then remove the weight. Raise the piece of leather to a vertical position. If the paper does not fall without assistance, the film is considered tacky.

## **Annex C**

(normative)

### **Gloss determination of solvent wax polish**

#### **C.1 Apparatus**

**C.1.1** Standard leather square, of leather that complies with B.1 of sizes 100 x 100 mm and having an initial 60° specular gloss, after buffing (see C.2.1 of at least 10 units).

**C.1.2** A reflectometer

#### **C.2 Procedure**

**C.2.1** Buff the smooth surface of the leather square with clean cotton wool using moderate pressure until a constant 60° specular gloss is obtained.

**C.2.2** Evenly apply 0.1 g of the polish over prepared surface of the leather square with clean cotton wool.

**C.2.3** Allow to dry for 5 minutes. Check for compliance with the relevant requirement of 4.2.3 .

**C.2.4** Using clean cotton wool, buff the leather square to a constant 60° specular gloss. Record the gloss value.

**C.2.5** Repeat steps C.2.2 – C.2.4, there should be no decrease in gloss.



## Annex D

(normative)

### Softening point of non-volatile matter of wax polishes

#### D.1 Scope

In general, with materials of this type, softening does not take place at a definite temperature. As the temperature rises, these materials gradually and imperceptibly change from brittle solids to soft, viscous liquids. For this reason, the determination of the softening point must be made by a fixed, arbitrary and closely defined method if the results are to be comparable.

The softening point is, therefore, defined as the temperature at which a disk of the sample held within a horizontal ring is forced downward a distance of 25.4 mm under the weight of a steel ball as the sample is heated at a prescribed rate.

#### D.2 Apparatus

**D.2.1 Balls** — 2 steel balls of diameter  $9.5 \pm 0.1$  mm and of mass 3.45 g – 3.55 g.

**D.2.2 Ball Centring Guides** — 2 brass-centring guides of the shape and dimensions illustrated in Figure D.1(c).

**D.2.3 Beaker** — A glass beaker of diameter at least 85 mm and of height at least 110 mm to the bottom of the flared rim. (A 1 litre beaker has been found suitable).

**D.2.4 Rings** — 2 brass shouldered rings complying with the dimensions illustrated in Figure D.1 (b).

**D.2.5 Ring Holder** — A flat double ring holder of the shape and dimensions illustrated in Figure D.1 (b).

**D.2.6 Support for Ring Holder and Thermometer** — A support for the ring holder and thermometer that ensures that:

- (a) the rings are supported substantially in a horizontal position;
- (b) the bottoms of the rings are 24 mm to 25 mm above the bottom plate;
- (c) when the support is placed in the glass beaker, the bottom plate is 12 mm to 20 mm above the bottom of beaker;
- (d) the bottom of the bulb of the thermometer is level with the bottom of the rings but does not touch the ring holder.

**D.2.7 Thermometer** — A total immersion low softening point thermometer having a range of  $-2$  to  $80$  °C and complying with the requirements of ASTM E1 low, softening point thermometer type 15 °C.

#### D.3 Preparation of test sample

Prepare a sufficient quantity of the non-volatile matter contained in the sample polish.

#### D.4 Procedure

**D.4.1** Melt the prepared sample (D.3).

**D.4.2** Preheat the ring to approximately the temperature of the softening point of the prepared sample and place it on a clean metal plate.

**D.4.3** Immediately pour the melted prepared sample into the ring so that there will be an excess above the top surface when cool. Allow to cool to room temperature and allow to stand for at least 30 min.

**D.4.4** Cut off the excess material clearly with a slightly heated knife.

**D.4.5** Fill the beaker to a depth of 100 mm — 108 mm with freshly boiled water that has been cooled to at least 30 °C below the expected softening point.

**D.4.6** Place the ring and thermometer in the support, place the ball-centring guide in a centred position over the rings, and insert the support into the beaker.

**D.4.7** Place the ball in the water but not on the sample, and maintain the initial temperature of the water for 15 min.

**D.4.8** Using suitable forceps, place the ball in the centring guide on the test sample in the ring.

**D.4.9** So heat the beaker and its contents that the temperature of the water is raised  $5\text{ °C} \pm 0.5\text{ °C}$  for 3 min. Agitate the water by means of a slow fine jet of air to facilitate uniform heating throughout the beaker.

**D.5 Results** — Report as the softening point of non-volatile matter of the polish, the temperature indicated by the thermometer at the instant the ball drops through the prepared sample. If both rings are used, report the average of the two readings as the softening point.

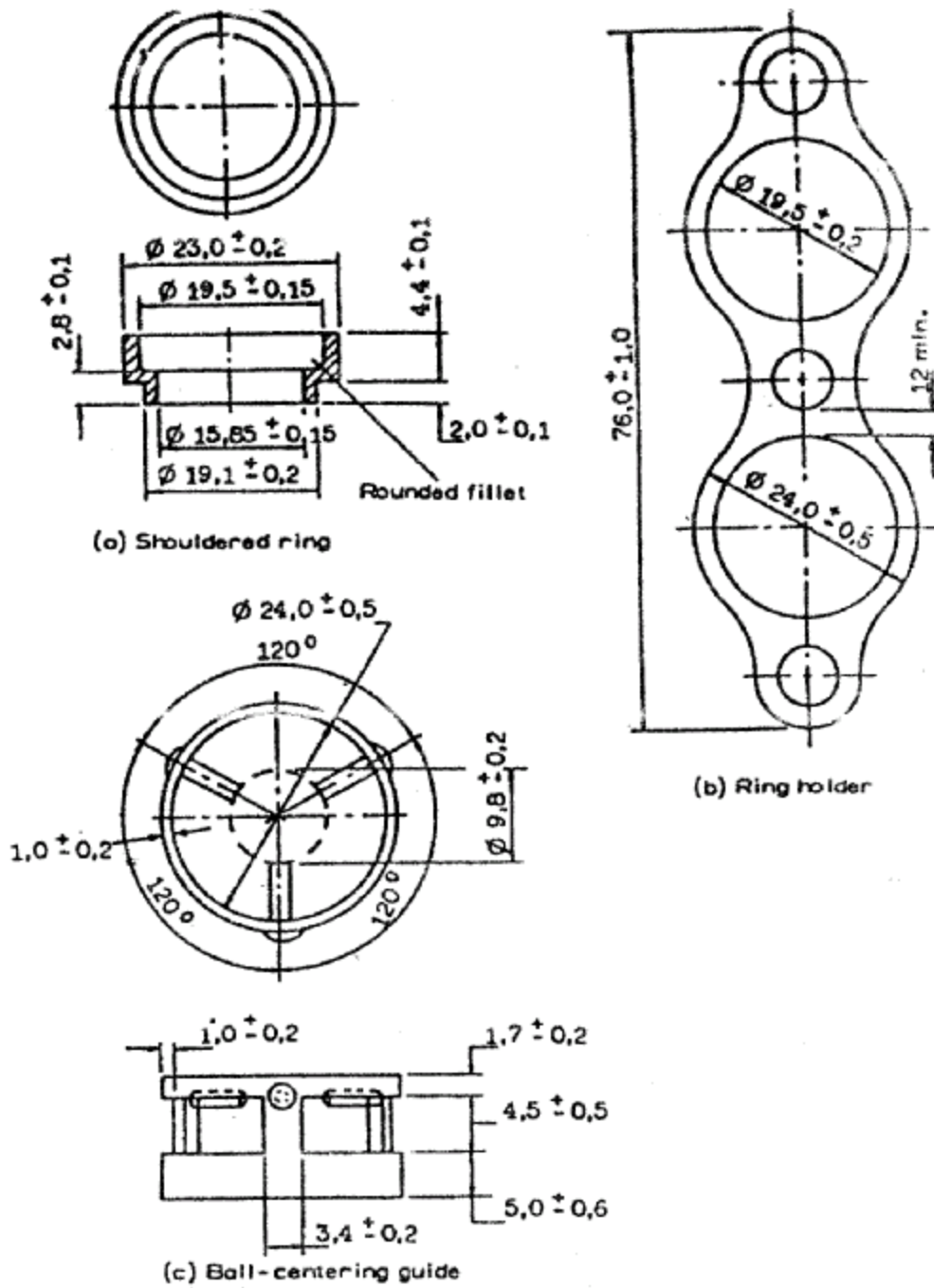


Figure D.1 — Shouldered ring, ring holder and ball-centre guide

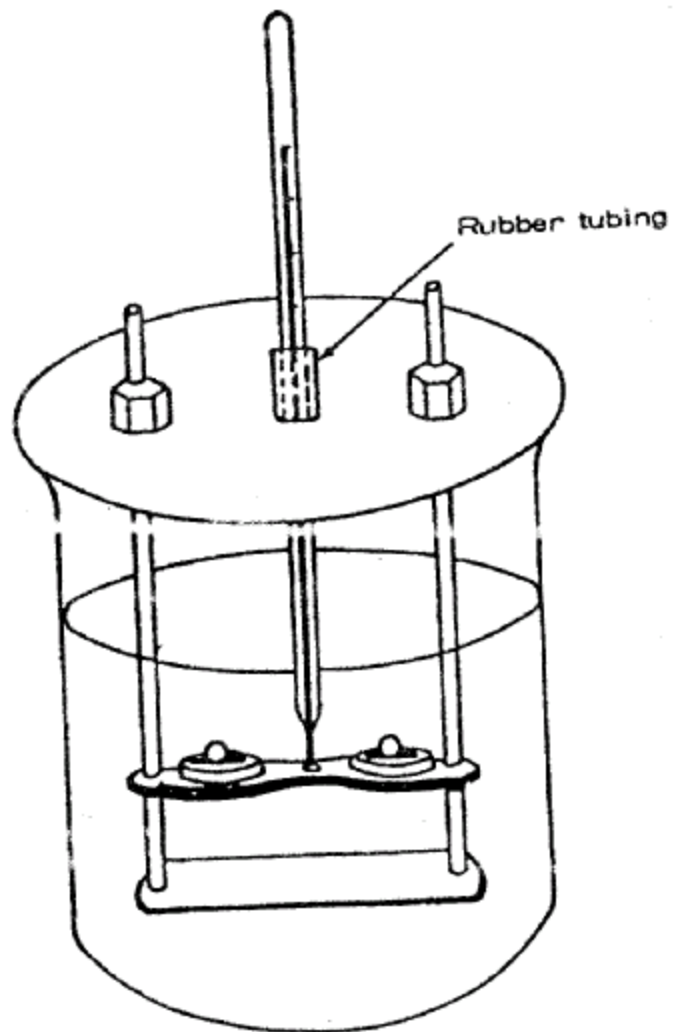


Figure D.2 — Assembly of apparatus showing two rings

## **Annex E**

(normative)

### **Non-volatile matter**

#### **E.1 Scope**

This method determines the non-volatile matter in waxes, polishes and related materials.

#### **E.2 Method A**

Accurately determine the mass of a 5 g sample and put it into a tarred 75-mL porcelain dish and dry to constant mass at 105 °C. Calculate the mass of the residue as non-volatile matter.

#### **E.3 Method B**

Dry an aluminium dish, 6 cm by 1.5 cm, with cover, by heating in an oven for 1 h at 105 °C to 110 °C, cool in a desiccator and determine the mass to the nearest milligram. Place a 2 g to 3 g sample into the dish, cover immediately and determine the mass. Remove the cover and transfer the dish containing the sample to a drying oven and heat for 6 h at 105 °C to 110 °C. Cover the dish at the end of this period, cool in a desiccator and determine the mass. Multiply the mass of the residue by 100 and divide by the original mass of the sample to obtain the per cent of non-volatile matter.

## Annex F

(normative)

### Penetration of wax (paste) polishes

#### F.1 Scope

This test method covers measuring with a penetrometer the penetration of wax polishes as an empirical measure of firmness or consistency.

#### F.2 Definition

**F.2.1 Penetration** — The depth, in tenths of a millimetre, that a standard cone will penetrate the sample under fixed conditions of mass, time and temperature.

#### F.3 Apparatus

**F.3.1 Penetrometer** — Penetrometer calibrated in tenths of a millimetre.

**F.3.2 Cones** — Two brass cones fitted with monel metal tips and complying with the dimensions given in Figure F.1. Each cone is fitted with a plunger suited to the penetrometer used and is such that the combined mass of the cone and plunger comply with to the applicable of the values given below:

60/90° cone 150.00 ± 0.15 g

90° cone 100.00 ± 0.10 g

#### F.4 Procedure

**F.4.1** Take two test sample containers and without removing the lids, condition one at 20.0 ± 0.5 °C for 24 h and the other at 35.0 °C ± 0.5 °C for 24 h.

**F.4.2** Fit the 60/90° cone and its plunger to the penetrometer.

**F.4.3** Take from its conditioning chamber the container conditioned at 20 °C and carry out the procedure set out in F.4.4 and F.4.10 below quickly as possible.

**F.4.4** Remove the lid from the container, and carefully scrape off the top layer of the test sample to a depth of 3-5 mm, leaving the exposed surface smooth and level.

**F.4.5** Place the container on the platform of the penetrometer and so adjust the height of the penetrometer that the point of the cone just touches the surface of the sample and is at least 15 mm from the edge of the container.

**F.4.6** Zero the scale.

**F.4.6** Release the plunger for 5 s.

**F.4.7** Read the penetration in tenths of a millimetre.

**F.4.8** Carry out the test at other points, at least 15 mm apart, on the surface of the test sample until three readings are obtained of which the highest and lowest do not differ by more than 3 units from the middle reading.

**F.4.9** Repeat steps **F.4** — **F.4.9** using the 90° cone and the test sample conditioned at 35 °C.

**F.4.10 Results**

Report the penetration of the polish:

- a) at 20 °C as the average of the three readings in F.4.9,
- b) at 30 °C as the average of the three readings in F.4.10.

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60/90 ° cone: 150,00 ± 0,15 g  
 90 ° cone: 100,00 ± 0,10 g

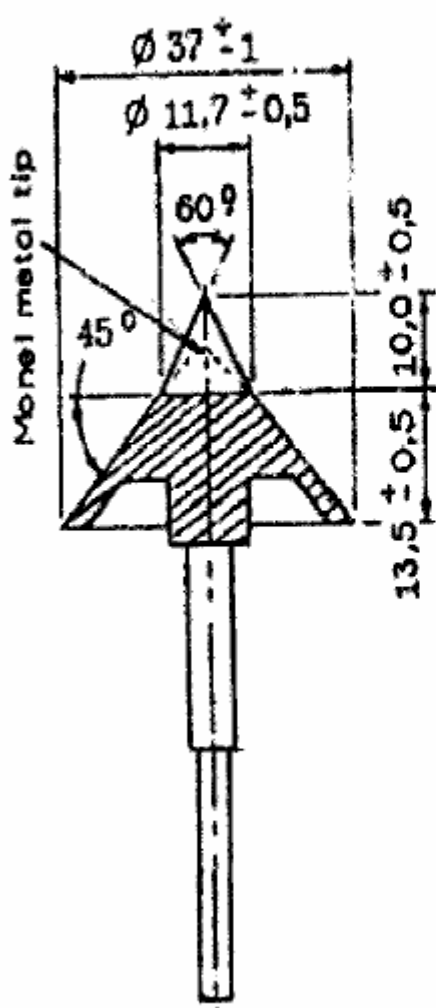


Figure F.1(a) — 60/90° CONE.

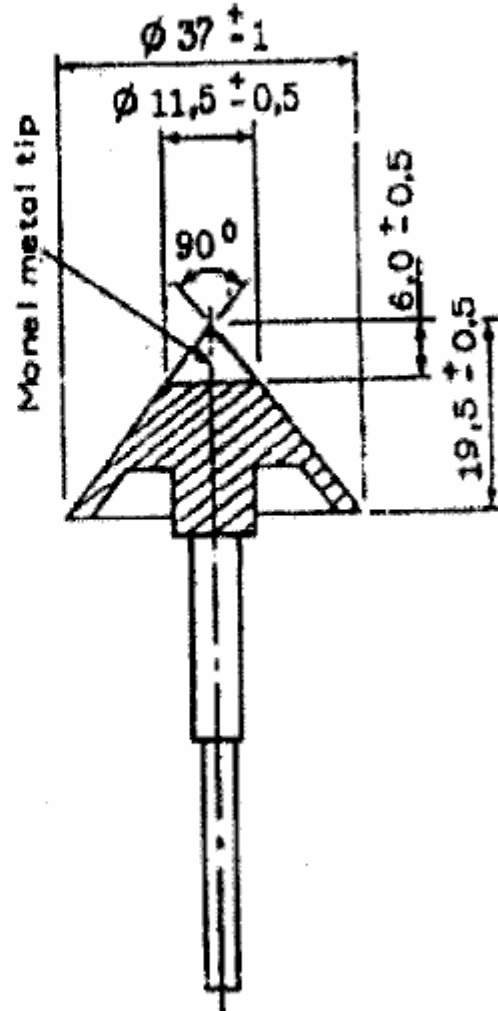


Figure F.1(b) — 90° CONE

All dimensions are in millimetres



## **Annex G**

(normative)

### **Ash content**

#### **G. 1 Scope**

These methods determine the ash contents in waxes, polishes and other related materials.

#### **G.2 Procedures**

##### **G.2.1 Method A**

Melt a portion of non-volatile matter, prepared as in E.2, Method A and thoroughly stir. Accurately determine the mass of a 3 g sample (to the nearest mg) in a tarred crucible. Burn off the combustible matter slowly and ignite the residue to constant mass at a dull red heat.

$$\text{Ash content, percent} = \frac{\text{mass of residue}}{\text{mass of sample}} \times 100$$

##### **G.2.2 Method B**

Determine the mass of an amount of sample (to the nearest mg) containing about 2 g of non-volatile matter in a tarred porcelain crucible. Evaporate off the volatile matter and burn off the combustible matter slowly by igniting to constant mass.