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## **DRAFT EAST AFRICAN STANDARD**

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**Black bituminous paints for cold application — Specification**

**EAST AFRICAN COMMUNITY**

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## Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 070, *Paints, varnishes and related products*.

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## Black bituminous paints for cold application — Specification

### 1 Scope

This Draft East African Standard specifies requirements, methods of sampling and test for black bitumen solutions, without pigments or fillers, for cold application, which will yield by brushing, spraying or a suitable dipping process, effective coatings for protection of substrates.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ASTM F735-17, *Standard Test Method for Abrasion Resistance of Transparent Plastics and Coatings Using the Oscillating Sand Method*

ISO 1523, *Determination of flash point — Closed cup equilibrium method*

ISO 1524, *Paints, varnishes and printing ink — Determination of fineness of grind*

ISO 3251, *Paints varnishes and plastics — Determination of non-volatile matter content*

ISO 3856-6, *Paints and varnishes — Determination of "soluble" metal content — Part 6: Determination of total chromium content of the liquid portion of the paint — Flame atomic absorption spectrometric method*

ISO 4618, *Paints and varnishes — Terms and definitions*

ISO 6503, *Paints and varnishes -- Determination of total lead — Flame atomic absorption spectrometric method*

ISO 9117-1, *Paints and varnishes — Drying tests — Part 1: Determination of through-dry state and through-dry time*

ISO 9117-3, *Paints and varnishes — Drying tests — Part 3: Surface-drying test using ballotini*

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

ISO 17132, *Paints and varnishes — T-bend test*

### 3 Terms and definitions

For the purposes of this document, the definitions given in ISO 4618 and the following apply:

#### 3.1 bitumen

a very viscous liquid or solid, consisting essentially of hydrocarbons and their derivatives, which is soluble in carbon disulphide. It is substantially non-volatile and softens gradually when heated. It is black or brown in colour and possesses water proofing and adhesive properties. It is obtained by refinery processes from

petroleum and is also found as a natural deposit or as a component naturally occurring asphalt, in which it is associated with mineral matter.

- 3.2 Surface-drying state**  
general term describing the state of the surface of a coating of paint whether surface-dry or not
- 3.3 surface-dry surface**  
drying state of a coating of paint when balloting can be lightly brushed away without damaging the surface of the coating
- 3.4 surface-drying time**  
Period of time between that at which a coating of paint is applied to a prepared test panel and that at which the coating is assessed by the procedure described in A.3.3
- 3.5 flashpoint (closed cup)**  
Minimum temperature to which a product, confined in a closed cup, shall be heated for the vapours emitted to ignite momentarily in the presence of a flame, when operating under standardized conditions
- 3.6 volatile organic compound (VOC)**  
fundamentally, any organic liquid and/or solid that evaporates spontaneously at the prevailing temperature and pressure of the atmosphere with which it is in contact
- 3.7 ready for use**  
the state of a product when it is mixed in accordance with the manufacturer's instructions in the correct proportions and thinned if required using the correct thinners so that it is ready for application by the approved method

## 4 Types

The paint shall be either of the following two types:

### 4.1 Type 1

The paint shall be a homogeneous solution of bitumen in a solvent, which shall consist of paraffin hydrocarbons and aliphatic hydrocarbons. The paraffin hydrocarbons may include naphthenic compounds.

### 4.2 Type 2

The paint shall be a homogeneous solution of bitumen in white spirit.

## 5 Requirements

### 5.1 General requirements

#### 5.1.1 Consistency

The paint shall be in such a condition that with only light stirring; it is suitable for application either by brushing, spraying or by dip application according to the manufacturer's instructions.

## 5.2 Specific requirements

**5.2.1** The black bituminous paint shall also comply with the requirements given in the Table 1 when tested in accordance with the test methods specified therein.

**Table 1 — Requirements for bituminous paints**

S/N	Characteristic		Requirement	Test method	
i.	Total lead content, ppm, max.		90	ISO 6503	
ii.	Solids content, %,m/m, min.		Type 1	50	ISO 3251
			Type 2	40	
iii.	Flash point, °C, min		32	ISO 1523	
iv.	Skin formation		Shall show no skin formation	Annex A	
v.	Flexibility and adhesion using 6 mm mandrel		There shall be no visible damage or detachment of film after 48 h	ISO 17132	
vi.	Fineness of dispersion, /Fineness of grind Hegman-Type Gauge, µm, max.		30	ISO 1524	
vii.	Scratch hardness using 15 N for type 1		No such scratches shall produce a bare metal	ASTM F735-17	
viii.	Drying time at 25 °C ± 2 °C, h, max.	Hard drying	24	ISO 9117-1	
		Surface drying	6	ISO 9117-3	
ix.	Chromium, ppm in dried paints, max.		5	ISO 3856-6	

### 5.2.2 Quantity of material

The quantity of material shall not be less than the declared volume at 25 °C ± 2 °C when tested in accordance with Annex B.

## 6 Packaging and marking

### 6.1 Packaging

The paint shall be packed in suitable containers that prevents it from deterioration during storage, transportation and normal handling.

### 6.2 Marking

#### 6.2.1 Marking on the container

**6.2.1.1** The marking shall be either in English, Kiswahili or French or in combination as agreed between the manufacturer and the supplier. Any other language shall be optional.

**6.2.1.2** Each container shall be marked legibly and indelibly with the following:

- a) the name of the product as “Black bituminous paint”;
- b) manufacturer’s name and physical address;



NOTE The name, physical address of the distributor/supplier and trademark may be added as required.

- c) net content, in L;
- d) date of manufacture;
- e) spreading capacity, in m<sup>2</sup>/L;
- f) instructions for use; and
- g) an indication of flammability.

### **6.2.2 Marking on the label of the container**

Each label of the container shall be marked legibly and indelibly with the following:

- a) date of manufacture;
- b) instructions for use, storage and handling;
- c) pot-life;
- d) shelf life;
- e) colour; and
- f) batch number.

## **7 Sampling**

Sampling shall be done in accordance with ISO 15528.

## Annex A (normative)

### Examination of skin formation

#### A.1 Apparatus

The following apparatus are required:

**A.1.1 Container**, one metal container of 250 ml with a tight fitting lid.

**A.1.2 Spatula**

#### A.2 Test conditions

The test shall be carried out at a temperature of  $23\text{ °C} \pm 2\text{ °C}$  and a relative humidity of  $65 \pm 2$  per cent.

#### A.3 Procedure

The procedure shall be as follows:

**A.3.1** Stir and pour 125 ml to 130 ml of the paint into the container, place the lid on tightly and momentarily invert the container to seal the lid.

**A.3.2** Allow the container to stand upright for 7 days.

**A.3.2** Open the container and test the surface of the paint with a spatula for any skin formation. Examine the walls and the lid for the presence of the skin.

## Annex B (normative)

### Determination of the quantity of material

#### B.1 Apparatus

B.1.1 Graduated measuring cylinder

B.1.2 Empty container

#### B.2 Procedure

Measure out the volume of the paint by pouring it into the measuring cylinder and emptying the paint into an empty container. Measure out until all the paint is finished and record the total volume of the paint by adding up the volume.

#### B.3 Calculation

The measured volume shall be expressed as follows:

$$\% \text{ of volume measured is } = \frac{V - V_1}{V} \times 100$$

where

$V_1$  is the total measured volume; and

$V$  is the declared volume.

## Bibliography

KS 621:1986, *Specification for black bituminous paints for cold application*

Public Review Draft East African Standard April 2021



