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DRAFT EAST AFRICAN STANDARD

Water based undercoat — 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.*

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

Water based undercoat — Specification

1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for water based undercoat used on buildings after surface preparation and priming wherever necessary.

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.

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

ISO 2812-1, *Paints and varnishes — Determination of resistance to liquids — Part 1: Immersion in liquids other than water*

ISO 2884-2, *Paints and varnishes — Determination of viscosity using rotary viscometers — Part 2: Disc or ball viscometer operated at a specified speed*

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 6504-3, *Paints and varnishes — Determination of hiding power — Part 3: Determination of contrast ratio of light coloured paints at a fixed spreading rate*

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 11890-1, *Paints and varnishes — Determination of volatile organic compound (VOC) content — Part 1: Difference method*

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

ISO 19396-1, *Paints and varnishes — Determination of pH value — Part 1: pH electrodes with glass membrane*

ISO 21546, *Paints and varnishes — Determination of the resistance to rubbing using a linear abrasion tester (crockmeter)*

3 Terms and definitions

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

3.1
water based undercoat
a paint coat whose medium consists of any stable synthetic polymer emulsions in water pigment as suitable ingredients

3.2
volatile organic compound content
the mass of the volatile organic compounds present in a coating material, as determined under specified conditions

3.3
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

3.5
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 Requirements

4.1 General requirements

4.1.1 Composition

The water based undercoat shall be a medium consisting of any stable synthetic polymer emulsion in water containing pigments and a suitable ingredient as may be necessary to produce an undercoat so as to satisfy the requirements of this specification.

4.1.2 Odour

The odour of the water based undercoat in the container, during and after application shall not be abnormally pungent, offensive or disagreeable.

4.1.3 Settling

The water based undercoat shall be free from settling. Settling if any, shall be easily incorporated by stirring.

4.1.4 Foaming

When the water based undercoat is suitably thinned with distilled water not exceeding 15 % (v/v), it shall mix readily with a minimum amount of foaming to a smooth and homogeneous state.

4.1.5 Application properties

The water based undercoat shall be suitable for application by brush or roller when thinned in accordance with manufactures instruction. The resulting film shall not show pigment flocculation and coarseness.

4.2 Specific requirements

The water based undercoat shall comply with the requirements given in the Table 1.

Table 1 — Requirements for the water based undercoat

S/N	Characteristic		Requirement	Test method
i.	Total lead content, ppm, max.		90	ISO 6503
ii.	Solids content, %,m/m, min.		50	ISO 3251
iii.	pH, 25 °C ± 2		7-9	ISO 19396-1
iv.	Resistance to wet abrasion, cycles, minimum		1500	ISO 21546
v.	Skin formation		Shall show no skin formation	Annex A
vi.	Viscosity, pa.s, min		1	ISO 2884-2
vii.	Resistance to liquids other than water		No discoloration, blistering, softening, swelling, loss of adhesion	ISO 2812-1
viii.	Volatile organic compound, g/L		50	ISO 11890-1
ix.	Hiding power, %, min.		80	ISO 6504-3
x.	Fineness of dispersion, /Fineness of grind Hegman-Type Gage, µm, max.		30	ISO 1524
xi.	Drying time at 25 ˚C ± 2 ˚C, h, max.	Hard drying	2	ISO 9117-1
		Surface drying	1	ISO 9117-3
xii.	Chromium, ppm in dried paints, max.		5	ISO 3856-6

4.3 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.

4.4 Temperature stability

The water based undercoat shall Meet all the requirements in the standard after a period of not less than one year under storage condition of 40 °C ± 2 °C.

5 Packaging and marking

5.1 Packaging

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

5.2 Marking

5.2.1 Marking on the container

5.2.1.1 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

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

a) name of the product as “Water based undercoat”;

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^2/L; and

f) instructions for use.

5.2.2 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) shelf life;

d) colour; and

e) batch number.

6 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 ºC ± 2 ºC and a relative humidity of 65 ± 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

[1] KS 1823:2007, *Water-based undercoat — Specification*

[2] FTZS 2019, *Water based undercoat — Specification*

