DRAFT EAST AFRICAN STANDARD

Semi-gloss (egg shell) solvent borne paints for interior and exterior use — Specification

EAST AFRICAN COMMUNITY
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.
Semi-gloss (egg shell) solvent borne paints for interior and exterior use — Specification

1 Scope

This Draft East African Standard specifies requirements, methods of sampling and test for semi-gloss (egg-shell) solvent borne paints for interior and exterior use. This standard does not apply to automotive, road marking and Industrial applications.

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 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 17132, Paints and varnishes — T-bend test

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

ISO 1514, Paints and varnishes — Standard panels for testing

ISO 1518-1, Paints and varnishes — Determination of scratch resistance — Part 1: Constant-loading method

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

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

ISO 3270, Paints and varnishes and their raw materials — Temperatures and humidities for conditioning and testing

ISO 1514, Paints and varnishes — Standard panels for testing

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

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 9117-1, Paints and varnishes — Drying tests — Part 1: Determination of through-dry state and through-dry time
ISO 2813, Paints and varnishes — Determination of specular gloss of non-metallic paint films at 20°, 60° and 85°

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 16474-1, Paints and varnishes — Methods of exposure to laboratory light sources — Part 1: General guidance

ISO 16474-2, Paints and varnishes — Methods of exposure to laboratory light sources — Part 2: Xenon-arc

ASTM D4828-94, Standard test methods for practical washability of organic coatings

ISO 20566, Paints and varnishes — Determination of the scratch resistance of a coating system using a laboratory-scale car-wash

ISO 4628-10, Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 10: Assessment of degree of filiform corrosion

3 Terms and definitions

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

4 Requirements

4.1 General requirements

4.1.1 Condition in the container

The paint shall show no evidence of; biological growth, corrosion of the container, livering or hard settlement, and shall be free from lumps, foreign material or surface skins that cannot be re-dissolved. Upon mixing the paint shall be returned to a smooth and homogeneous consistency, which is free from; gel structures, persistent foam or air bubbles.

4.1.2 Finish

When two coats of paints are applied by brush to a test panel of burnished mild steel or tinplate test, the film, when dry, shall be of uniform colour and appearance and have a semi-glossy finish(eggy shell).

4.2 Specific requirements

The paint shall meet the requirements specified in Table 1.
Table 1 — Specific requirements for semi-gloss (egg shell) solvent borne paints for exterior and interior use

<table>
<thead>
<tr>
<th>S/N</th>
<th>Characteristic</th>
<th>Requirement</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Total lead content, ppm, max.</td>
<td>90</td>
<td>ISO 6503</td>
</tr>
<tr>
<td>ii.</td>
<td>Solids content, %, m/m, min.</td>
<td>50</td>
<td>ISO 3251</td>
</tr>
<tr>
<td>iii.</td>
<td>Skin formation</td>
<td>Shall show no skin formation</td>
<td>Annex A</td>
</tr>
<tr>
<td>iv.</td>
<td>Viscosity, pa.s</td>
<td>0.4 – 0.8</td>
<td>ISO 2884-2</td>
</tr>
<tr>
<td>v.</td>
<td>Gloss, %</td>
<td>Shall have specular gloss of not more than 45 per cent after drying for 16 hours, and tested using a 60° head gloss meter</td>
<td>ISO 2813</td>
</tr>
<tr>
<td>vi.</td>
<td>Hiding Power, %, min.</td>
<td>90</td>
<td>ISO 6504-3</td>
</tr>
<tr>
<td>vii.</td>
<td>Fastness to light</td>
<td>After 28 days of testing, there shall be no visible difference between the two panels.</td>
<td>ISO 16474-2</td>
</tr>
<tr>
<td>viii.</td>
<td>Resistance to yellowing (Dark Chamber) for white paints</td>
<td>The resistance to yellowing shall be not less than 8 by visual assessment.</td>
<td>ISO 4628-10</td>
</tr>
<tr>
<td>ix.</td>
<td>Washability</td>
<td>When two coats of paint are applied test panels and aged for 7 days and 500 cycles made, the change of gloss of the paint shall not exceed 4 gloss units when tested by a 60° head gloss meter</td>
<td>ISO 20566:</td>
</tr>
<tr>
<td>x.</td>
<td>Fineness of dispersion, Hegman-Type Gage, µm, max.</td>
<td>10</td>
<td>ISO 1524</td>
</tr>
<tr>
<td>xi.</td>
<td>Drying time at 25 °C ± 2 °C, h, max.</td>
<td>Hard drying</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surface drying</td>
<td>3</td>
</tr>
<tr>
<td>xii.</td>
<td>Chromium, ppm in dried paints, max.</td>
<td>5</td>
<td>ISO 3856-6</td>
</tr>
<tr>
<td>xiii.</td>
<td>Brushing properties</td>
<td>The paint film, when dry, shall not show signs of sagging, running or streaking and shall be free from brush marks</td>
<td>Annex B</td>
</tr>
<tr>
<td>xiv.</td>
<td>Rolling properties</td>
<td>The paint shall show satisfactory rolling, spreading, leveling and lapping properties with no more than slight transient bubbling, dripping, clogging or fly-off paint from the roller.</td>
<td>Annex C</td>
</tr>
</tbody>
</table>

5 Packaging

Semi-gloss solvent (egg shell) borne paints for interior and exterior use shall be packaged in a suitable container that prevents it from deterioration during storage, transportation and normal handling.
6 Labelling

6.1 Labelling of semi-gloss solvent (egg shell) borne paints for interior and exterior use shall be either in English, Kiswahili or French or in combination as agreed between the manufacturer and / or the supplier. Any other language is optional.

6.2 Each container shall be legibly and indelibly marked with the following information.
   a) the words “Semi-Gloss (Eggshell) Solvent borne paints”;
   b) name and address of the manufacturer;
   c) net contents in litres;
   d) Colour and/or colour;
   e) date of manufacture;
   f) best before date;
   g) colour of the paint;
   h) instructions for use, storage, disposal and safety requirements; and
   i) batch number.

8 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 °C ± 2 °C 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)

Brushing properties test

B.1 Apparatus

The following apparatus are required.

B.1.1 Brush, a good quality pure bristle brush for paint 4 cm to 6 cm wide

B.1.2 Test panes, complying with ISO 1514, burnished mild steel or tin-plate panels placed vertically or nearly so and rigidly held (e.g. fixed to a solid backing) to prevent movement during testing.

B.2 Test condition

The test shall be carried out at a temperature of 23 ± 2 °C and a relative humidity of 65 ± 2 per cent.

B.3 Procedure

B.1 Wet the brush with the paint properly and apply the paint to the test panel by criss cross strokes across a section of the panel and then, where appropriate, lay off the coat with vertical stokes using the tip of the brush.

B.2 Coat the next section in the same manner and continue this procedure until three quarters of the panel is covered as evenly as practicable; noting the ease or difficulty of lapping until the whole panel is coated.

B.3 During the application, note such properties as the brushing, flowing, spreading, levelling and setting up of the paint.

B.4 Allow the film to dry for 24 h and examine the area of lapping and that adjacent for differences in gloss and/or other defects.
Annex C  
(normative)  

Rolling properties test  

C.1 Apparatus  
The following apparatus are required:  

C.1.1 Roller coater, of size 10 cm to 15 cm  

C.1.2 Commercial roller tray  

C.1.3 Test panel, burnished mild steel or tinplate panels complying with ISO 1514 placed vertically or nearly vertically and rigidly held to prevent movement during the test.  

C.2 Test conditions  
The test shall be carried out at a temperature of 23 ± 2 °C and a relative humidity of 65 ± 2 per cent.  

C.3 Procedure  
The procedure shall be as follows:  

C.3.1 Saturate the roller with paint using the roller tray.  

C.3.2 Remove the excess paint by rolling on the subsidiary panel.  

C.3.3 Apply paint to section of the test panel.  

C.3.4 Continue steps C.3.1 to C.3.3 until three quarters of the panel is covered evenly. Noting the ease or difficulty of lapping until the whole panel is coated. During application, note such properties as rolling, flowing, spreading, leveling, bubbling, dripping, logging and fly-off.  

C.3.5 Allow the film to dry for 24 h and examine the area of lapping and that adjacent for difference in gloss and/or other defects.
Bibliography

