Auto refinishing paints — Specification

Part 1: Synthetic resin based
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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.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. 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 procedures of the Community.

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.

This Draft East African Standard, DEAS CD/K/07:2014, was prepared by Technical Committee EASC/TC 70, Paints, Varnishes and other related products. The Committee is composed of representatives from National Standards Bodies, regulators and academia, together with the representatives from the private sector and consumer organizations in Partner States.
Introduction

Paint is any liquid, liquefiable, or mastic composition that, after application to a substrate in a thin layer, converts to a solid film. It is most commonly used to protect, color, or provide texture to objects.

Paint production requires the binder, diluent, pigment and additives. The binder is a vehicle and forms the film of the paint. The choice of the component as binder depends on the properties of the cured film desired. It imparts adhesion and strongly influences properties such as gloss, durability, flexibility, and toughness. The binders include synthetic or natural resins.

The diluent is used to dissolve the polymer and adjust the viscosity of the paint. It is volatile and does not become part of the paint film.

The pigments and fillers are used to improve some properties of paints. Pigments contribute color and fillers improve toughness, texture and give the paint special properties.

The additives are added in small amounts to provide a significant effect on the product. They modify surface tension, improve flow properties, improve the finished appearance, increase wet edge, improve pigment stability and impart antifreeze properties.

The paint concerned by this standard is synthetic resin based and made of light solvent and fast pigments.

The requirements for this standard are intended to render efficient its use in order to satisfy the users and comply with the environment standards.
Auto refinishing paints — Specification

Part 1: Synthetic resin based

1 Scope

This East African Standard specifies the requirements, sampling and test methods for auto refinishing paints, synthetic resin based.

2 Normative references

The following documents are referred to this standard:

1. ISO 1524 : 2003, Paints, Varnishes and printing inks – Determination of fineness of grind
4. ISO 2813 : 1994, Paints and varnishes – Determination of specular gloss of non-metallic paint films at 20 degrees, 60 degrees and 85 degrees
6. ISO 7253, Paints and varnishes — Determination of resistance to neutral slate spray
7. ISO 2810, Paints and varnishes — Natural weathering of coatings — Exposure and assessment
8. KS 161, Methods of test for paints, varnishes, lacquers and enamels Part 15, Determination of resistance to neutral salt spray (corrosion test)


3 Requirements

3.1 General requirements

3.1.1 The paint shall be made of air drying resin.

3.1.2 The paint shall be made of light and solvent fast pigments.

Specific requirements

<table>
<thead>
<tr>
<th>SL</th>
<th>Parameter</th>
<th>Requirements</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Skinning after 14 days at 25°C ± 2°C</td>
<td>No presence of skin</td>
<td>Annex A</td>
</tr>
<tr>
<td>II.</td>
<td>Viscosity, s</td>
<td>95-105</td>
<td>ISO 2884-2</td>
</tr>
<tr>
<td>III.</td>
<td>Solid Content, (%) m/m</td>
<td>40</td>
<td>ISO 3251</td>
</tr>
<tr>
<td>IV.</td>
<td>Drying times</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>Surface drying time at 25°C ± 2°C, hr, max</td>
<td>2</td>
<td>ISO 9117-3</td>
</tr>
<tr>
<td>b)</td>
<td>Hard drying time at 25°C ± 2°C, hr, max</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>Recoatability at 25°C ± 2°C after 24 hours</td>
<td>No lifting</td>
<td>Annex B</td>
</tr>
<tr>
<td>VI.</td>
<td>Gloss*, min at 60° gloss meter angle</td>
<td>85</td>
<td>ISO 2813</td>
</tr>
<tr>
<td>VII.</td>
<td>Effect on Heat</td>
<td>No colour change or signs of other deterioration</td>
<td>ISO 3248</td>
</tr>
<tr>
<td>VIII.</td>
<td>Opacity, contrast ratio (%), min</td>
<td>90</td>
<td>ISO 6504-3</td>
</tr>
<tr>
<td>IX.</td>
<td>Resistance to neutral salt spray</td>
<td>no evidence of blistering staining, loss of adhesion or creep of corrosion on panels</td>
<td>ISO 7253</td>
</tr>
</tbody>
</table>
X.  | Accelerated Weathering (Corrosion Resistance – Cyclic method when tested for 35 cycles) | no evidence of blistering, staining, loss of adhesion or creep corrosion on panels | ISO 16474-1: 2013

XI. | Weather resistance for a minimum of two years when exposed on testing rack at an angle of 2° | To have a good weathering resistance | ISO 2810

XII. | Lead content, ppm max | 100 | ISO 3856

†1 cycle being 4 h in salt spray chamber followed by 18 h in the humidity test chamber followed by 2 h in the freezing chamber.

3.5.9 Shelf life — The paint shall have minimum shelf life of 2 year.

4 Packaging

The paint shall be packed in suitable container that do not affect the quality of the paint and in suitable quantities.

5 Marking

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

a) The words" synthetic resin based"

b) Manufacturer’s name and/or registered trademark;

c) Date of manufacture.

d) Colour code

e) Net content

f) Batch/code number

g) Country of manufacture and country of origin

h) Expiry date or best before date

i) Instructions for use;

6 Sampling
Representative samples of paint shall be taken randomly from the factory, market or elsewhere and tested for compliance with the requirements of this standard.

7 Reagents

Analytical grade reagents and distilled water or deionized water of equivalent purity shall be used for appropriate tests.

8 Tests

Tests shall be carried out in duplicate at a temperature of 25 °C ± 2 °C and relative humidity of 65 % ± 2 %.
Annex A
(normative)

Examination of skin formation

A.1 Apparatus

The following apparatus are required.

A.1.1 Container — A 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 ± 2 °C and a relative humidity of 25 % ± 2 %.

A.3 Procedure

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 to seal the lid.

A.3.2 Allow the container to stand upright for 14 days.

A.3.3 Open the container and test the surface of the paint for any skin formation using a spatula. Examine the walls and the lid for the presence of the skin.
Annex B

(normative)

Determination of recoatability

B.1 Apparatus

B.1.1 Burnished mild steel panel — Flat sheets of size 150 mm x 100 mm x 4 mm.

B.1.2 Film applicator — Capable of applying a wet film thickness of 60 µm.

B.1.3 Stirrer — A glass stirrer long enough to stir the paint without dipping your hands into the paint.

B.2 Procedure

Thoroughly stir the paint and apply one coat onto a dry panel, and leave to dry for 6 hours at room temperature. Apply a second coat and examine for recoating properties after drying for 24 h.