
Draft Zambian Standard

**PAINTS AND VARNISHES- Road Marking Paints –
Specification
Part 1: Acrylic**

DRAFT FOR PUBLIC COMMENTS ONLY

ZAMBIA BUREAU OF STANDARDS

Amendments issued since publications

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ZAMBIA BUREAU OF STANDARDS

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CONTRACT REQUIREMENTS

A Zambian standard does not purport to include all the necessary provisions of a contract. Users of Zambian standards are responsible for their correct application.

TECHNICAL COMMITTEE RESPONSIBLE

The Paints and Technical Committee (CHD/6) upon which the following organisations were represented undertook the preparation of this Zambian standard:

Zambia Compulsory Standards Agency
Zambia Association for Consumers
Zambia Bureau of Standards

FOREWORD

This Zambian standard was prepared by the Paints and Varnishes Technical Committee (CHD/6) in accordance with the procedures of the Bureau. This standard is mainly based on SAZS 448; Part 1, 1995 - Non-reflectorized Solvent Borne Road Marking Paint.

Consideration was also accorded to the prevailing practice in the country.

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ZAMBIA BUREAU OF STANDARDS**RAFT ZAMBIAN STANDARD****ZS 354 Part 1: 2026****PAINTS AND VARNISHES- Road Marking Paints – Specification****Part 1: Acrylic****1 SCOPE**

This specification covers Road Marking paints made from a homo/co-polymer/ter-polymer emulsion for marking traffic lines on factory floors, airport run ways and roads, and makes provision for white, yellow and other colours. The paint should be non-bleeding on surfaces made of bituminous materials.

NOTE: Paints applied over bituminous screeds less than three months old or over concrete surfaces less than one month old are to be regarded as temporal markings with an expected service life of less than six months.

2 REFERENCES

ZS 201 - Paints and varnishes - Emulsion paints for interior and exterior use - specification.

ZS 284 - Paints and Varnishes - methods of test.

ZS 354 - Paints and Varnishes - Road marking paints, Part 2 - Chlorinated.

3 DEFINITIONS

For the purpose of this specification the following definitions shall apply.

3.1 Batch

A final blend of road-marking paint in one vessel from which smaller containers are filled for distribution and use.

3.2 Pigment volume concentration

The total volume of the pigments and the extenders, expressed as a percentage of the total volume of the pigments, the extenders and the non-volatile vehicle.

3.3 Standard test conditions

A temperature of $25 \pm 2^\circ\text{C}$ and a relative humidity of $50 \pm 5\%$.

4 REQUIREMENTS**4.1 Composition**

The materials shall consist of pigments with suitable proportions in a homo or co-polymer emulsion medium. Addition of small quantities of ingredients to produce special effects such as ease of wetting or grinding or to confer special properties such as anti-settling may be incorporated in the paint.

4.1.1 Volatile matter content

The volatile matter of the paint determined in accordance with ZS 284 Part 1 shall not exceed 50 % (m/m).

4.1.2 Coarse particles & foreign matter

When tested in accordance with ZS 284 Part 2 the paint shall not leave a residue of more than 1 % (m/m) on a sieve of nominal aperture size of 75 µm.

4.1.3 Dilutability

When suitably thinned with water, in accordance with manufacturers instructions, the material shall mix readily with minimum foaming to a smooth and homogeneous state. The foaming if any shall dissipate rapidly.

4.2 Condition in the container

The paint on receipt in an unopened full container within the specified shelf life shall not have an offensive odour and if any separation has taken place, the depth of the upper layer shall not exceed 5%. The paint shall be free from lumps and skins, shall not exhibit excessive settling or colour separation and shall easily be mixed to a homogenous state. Tests shall be done in accordance with ZS 201.

4.3 Resistance to skinning

When tested in accordance with ZS 284 Part 4 the well mixed paint shall not skin.

4.4 Consistency

The consistency of the paint, determined by means of a Krebs-Stormer Viscometer in accordance with ZS 284 Part 4 shall be 100 - 115 Ku.

4.5 Fineness of grind

When tested in accordance with ZS 284 Part 18 the paint shall have a fineness of grind reading not exceeding 30µm.

4.6 Application properties**4.6.1 Brushing properties**

When tested in accordance with ZS 284 Part 5 the paint shall brush on without excessive drag, shall flow without leaving excessive brush marks, and shall join smoothly. The resultant dry film shall have a uniform matt or eggshell appearance and shall be free from wrinkles and other imperfections.

4.6.2 Rolling properties

The paint when tested in accordance with ZS 284 Part 5, shall roll on smoothly without the formation of foam and shall join smoothly. The resultant dry film shall have a uniform matt or eggshell appearance.

4.6.3 Spraying properties

The paint as received or thinned in accordance with the manufacturer's instruction for use, it shall be suitable for application by pressure feed spray, airless spray and by road striping machinery. It shall spray well when applied. The resultant dry film shall have a uniform matt or eggshell appearance.

4.7 Drying properties

When tested in accordance with ZS 284 Part 6, the paint shall be dry to 'no pick up' within 20 minutes and hard dry within 90 minutes after application.

4.8 Hiding power

When tested in accordance with ZS 284 Part 10, at the appropriate wet film thickness given in ZS 354 part 2, the contrast ratio of white paint shall not be less than 0.95 and not less than 0.90 for other colours.

4.9 Colour

The colour of dry film of the yellow, black and white paint shall be a practical match to that colour of reference BS 381 C or as specified by the purchaser.

4.10 Reflectance of white paint

When tested in accordance with ZS 284 Part 9, white paint shall have a daylight 45° luminous directional reflectance of at least 80.0%.

4.11 Specular gloss at 85 °

When tested in accordance with ZS 284 Part 7 the 85° Specular Gloss of the dry film shall not exceed 20.

4.12 Resistance to bleeding

When determined in accordance with ZS 284 part 30, the difference between the daylight 45°, 0 ° luminous directional reflectance of the paint applied over the sealed and unsealed portions of the test substrate shall not exceed 3 units for white paint and 1 unit for yellow paint.

4.13 Resistance to artificial weathering

The dry paint film prepared and weathered in accordance, with ZS 284 part 25, shall show no chalking, checking, cracking or flaking and shall not have a colour change rating lower than the appropriate value in table 2 of part 2 of this standard.

4.14 Resistance to abrasion

The dry paint film, prepared and tested in accordance with ZS 284 part 31, shall withstand abrasion with at least 140 g of abrasive before the underlying surface is exposed over an area of 2 mm.

4.15 Storage stability

After storage for 30 days at a temperature of 25±2°C in a fully sealed container as delivered by the manufacturer, the paint shall meet all the requirements for a period of 9 months.

5 SAMPLING

As in ZS 201, clause 7.

6 TEST SAMPLE AND PANELS

As in ZS 201, clause 8.

7 PACKING AND MARKING

7.1 Containers

The paint shall be packed in clean dry containers. The containers shall be strong enough to withstand normal usage and shall be adequately sealed to prevent leakage and contamination of the contents during normal transportation and storage.

7.2 Marking

7.2.1 The following information shall be clearly and marked on each container or on a label securely fixed to it,

- (a) the manufacturers name and the brand name of the product,
- (b) the words “Acrylic Road-Marking Paint”
- (c) the colour
- (d) the batch identification
- (e) the directions for use, including thinning instructions for spray applications.

7.2.2 The containers may also be marked with the ZABS Certification Mark.