AS 2673—1983
UDC 667.638.6'37.25'.36.221'33.42

Australian Standard 2673—1983

PAINTS FOR STEEL STRUCTURES—ALKYD/ MICACEOUS IRON OXIDE

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

E

This Australian standard was prepared by Committee CH/3, Paints and Related Materials. It was approved on behalf of the Council of the Standards Association of Australia on 11 October 1983 and published on 2 December 1983.

The following interests are represented on Committee CH/3:

Australasian Corrosion Association

Australasian Zinc Development Association

Australian Paint Manufacturers Federation

Australian Retailers Association

Confederation of Australian Industry

Department of Defence

Government Paint Committee

National Association of Australian State Road Authorities

National Association of Testing Authorities, Australia

Oil and Colour Chemists Association, Australia

Railways of Australia Committee

Royal Australian Institute of Architects

This standard was issued in draft form for comment as DR 81248.

AUSTRALIAN STANDARD

PAINTS FOR STEEL STRUCTURES—ALKYD/ MICACEOUS IRON OXIDE

AS 2073—1983

First published 1983

PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.

ISBN 0 7262 3229 7

PREFACE

This standard was prepared by the Association's Committee on Paints and Related Materials under the direction of the Chemical Standards Board. It was prepared at the request of the National Association of State Road Authorities and is one of a series of product standards for the paints cross-referred to in AS 2312, Guide to the Protection of Iron and Steel against Exterior Atmospheric Corrosion.

Matters considered to be contractual in nature, i.e. subject to agreement, are not covered in the body of the standard but are referred to in Appendix A.

This standard relies essentially on product performance with specified properties for compliance; however, some compositional requirements are included.

CONTENTS

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
PAINTS FOR STEEL STRUCTURES—ALKYD/MICACEOUS IRON OXIDE

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for alkyd/micaceous iron oxide (MIO) paint intended to be used for the protection of iron and steel against exterior corrosion. The paint is suitable for application by brush or roller and by spraying (conventional air or airless).

NOTES:

1. Information required to be supplied with the purchase order is set out in Appendix A.
2. The paint is available in a restricted range of colours.

1.2 USES. Paint complying with this standard is intended to be used as a topcoat over the appropriate primer in paint systems for the protection of iron and steel against corrosion.

This paint complies with the provisions of Paint Reference No 17 of AS 2312.

Where used over hand or power tool cleaned steel systems such as SP4 and SP5 of AS 2312 should keep steel protected for 2 years to 5 years before major maintenance is required. Where used over abrasive blast cleaned surfaces, systems such as M.3 of AS 2312 should keep steel protected for 5 years to 10 years before major maintenance is required.

NOTE: Additional guidance on the use of alkyd/micaceous iron oxide paint is given in Appendix B.

1.3 REFERENCED DOCUMENTS. A list with the titles of the standards referred to in this standard is given in the Annex.

1.4 DEFINITIONS. For the purpose of this standard, the definitions given in AS 2310 apply.

SECTION 2. MATERIAL REQUIREMENTS AND PROPERTIES

2.1 COMPOSITION.

2.1.1 General. The paint shall consist essentially of micaceous iron oxide pigment, extenders and alkyd resin binder. The binder may contain some drying oils.

2.1.2 Pigments. When tested in accordance with Method 302.1 of AS 1580, the pigment content of the paint shall be not less than 50 percent. The MIO shall comply with AS XXXX* and shall retain its lamellar form in the paint film. For greys, the MIO content of the pigment shall be not less than 90 percent. For other colours, the MIO content of the pigment shall be not less than 67 percent.

2.2 PROPERTIES.

2.2.1 General. The paint shall comply with the requirements specified in Clauses 2.2.2 to 2.2.12 and 2.3.

The properties are summarized in Table 2.1.

Unless otherwise specified, the following conditions (viz (a), (b), (c), (d) and (e)) shall apply:

(a) Test panels shall be prepared in accordance with the requirements of Appendix C.

(b) The spreading rate of paint by brushing shall be such that a dry film thickness of 35 μm to 50 μm per coat is obtained (see Method 108.1 of AS 1580).

(c) Conditions for testing shall be in accordance with Method 101.5 of AS 1580.

(d) Conditions for air drying shall be in accordance with Method 101.1 of AS 1580.

(e) Test panels shall conform to the sizes specified in Table 2.1.

NOTE: See Appendix D for notes on paint testing.

2.2.2 Condition in container. The paint, as delivered, shall be free of gel, coarse particles, skin and foreign matter and be readily incorporated when tested in accordance with Method 103.1 of AS 1580.

2.2.3 Volume solids. When determined in accordance with Method 301.2 of AS 1580, the non-volatile content by volume of the paint shall be not less than 50 percent.

2.2.4 Skin formation. When examined in accordance with Method 203.1 of AS 1580, the paint shall show no skin formation.

2.2.5 Storage properties. After storage in unopened containers for 12 months from the date of manufacture, the paint, when tested in accordance with Method 211.2 of AS 1580, shall be readily reincorporated and be free of skin and gel.

2.2.6 Consistency. Mixed paint, when thoroughly incorporated, shall have a consistency in accordance with the range specified by the paint manufacturer.

2.2.7 Application properties.

2.2.7.1 *General.* Application properties shall be assessed using vertical steel panels prepared in accordance with Appendix C.

2.2.7.2 *Brushing properties.* When tested in accordance with Method 205.1 of AS 1580, the paint shall brush and join easily and show satisfactory flowing, spreading, levelling and lapping properties. The film, when dry, shall be free of sags, runs or any other film defect.

2.2.7.3 *Spraying properties.* When thinned in accordance with the manufacturer's printed instructions and tested in accordance with Methods 205.2 and 205.4 of AS 1580, mixed paint shall show good spraying properties.

The film, when dry, shall be free of sags, runs, streaks and any other film defect.

2.2.7.4 *Rolling properties.* When tested in accordance with Method 205.3 of AS 1580 using a roller as specified in the manufacturer's printed instructions, the paint shall show satisfactory rolling, spreading, levelling and lapping properties with no more than slight bubbling, dripping, clogging or fly-off of paint from the roller. The film, when dry, shall be free of sags, runs or any other film defect.

2.2.8 Surface dry. When one coat of paint is applied to a tinplate panel, allowed to stand 6 h and tested in accordance with Method 401.1 of AS 1580, the film shall be surface dry.

2.2.9 Recoating properties. A steel test panel pretreated in accordance with Method 105.2 of AS 1580 shall be painted with the paint under test and allowed to air-dry for 18 h to 24 h. A second coat of the paint shall be applied and allowed to air-dry for 24 h. When tested in accordance with Method 404.1 of AS 1580, the recoated panel shall show no evidence of wrinkling, patchiness or lifting of the previous coat.

2.2.10 Finish. A primed test panel prepared in accordance with Appendix C shall be painted with one coat of the paint under test and air-dried for 48 h. When the film is examined in accordance with Method 603.1 of AS 1580, it shall be of uniform colour and appearance and be free of film defects.

2.2.11 Corrosion resistance. A steel test panel prepared in accordance with Appendix C shall be coated with one coat of the paint under test and allowed to air-dry for 7 days. The edges of the panel shall be sealed.

The painted panel shall then be exposed to the neutral salt spray test in accordance with Part 3.1 of AS 2331 for a period of 30 days.

Exposed test panels shall be then assessed in accordance with Method 481.3 of AS 1580. The rating of visible rusting shall be not less than 9 and there shall be no Type 2 rusting accompanied by blistering.

2.2.12 Durability of paint system.

2.2.12.1 *Requirements.* The durability of the paint system, when tested in accordance with the procedure described in Clause 2.2.12.2, shall be such as to comply with the following minimum ratings:

Erosion	10	Blistering	10
Checking	10	Rusting	10
Cracking	10	Chalking	8
Flaking	10		

*In course of preparation.