SPECIFICATION AP-S2910

MIO OR ALUMINIUM PIGMENTED COATING FOR THE PROTECTION OF STEEL

1 SCOPE

This specification covers coating systems pigmented with micaceous iron oxide (MIO) or aluminium for application to steel structures on which optimum surface preparation can be achieved.

2 BACKGROUND

a) To obtain a broad overview of the Australian Paint Approval Scheme (APAS), refer to APAS document AP-D001.
b) To obtain an overview of restricted ingredients in APAS certified products, refer to APAS document AP-D123.
c) To obtain the current list of APAS participating manufacturers (and suppliers) and resellers, refer to APAS document AP-D152.
d) To obtain an overview of how to participate in the APAS, refer to APAS document AP-D177.
e) APAS approval to this specification may be gained by compliance with the requirements detailed in this specification and those in APAS document AP-D192.

3 DESCRIPTION AND GUIDE FOR USERS

3.1 General Requirements

a) This specification covers coating systems pigmented with micaceous iron oxide (MIO) or aluminium for application to steel structures on which optimum surface preparation can be achieved.
b) Some approved products may be surface tolerant and tolerate the presence of some corrosion products where optimum surface preparation has not been possible.
c) Products approved under this specification are generally for the protection of steel where the benefits of MIO or aluminium pigmentation is required. For applications subject to continuous condensation conditions, e.g., pipeline or tank exteriors, refer to APAS specification AP-S2940. Refer AS 2312.1 Table 6.3 for likely times to first maintenance and for other more durable systems.
d) The manufacturer's product data sheet or technical data sheet should confirm that the exposure conditions to which the coating system is to be exposed is within the capabilities of that system.
e) The service life of approved products or systems will vary according to chemical composition and manufacturer's data sheets should be consulted.

3.2 Sub-Classes

a) This specification does not incorporate any subclass.

3.3 Basis of this Specification

a) This specification is not based on any know specification or standard. It is, however, similar to APAS specification AP-S2940.
b) Paints approved under this specification are not specifically referenced in AS 2312.1.

4 REFERENCED DOCUMENTS

a) The following standards are referenced in this document:

i. **AS/NZS 1580** – Paints and related materials: Methods of test
ii. **AS 2312.1** – Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings – Part 1: Paint Coatings

These documents may be purchased through the Reference Standards Australia website: https://www.standards.org.au/

iii. **The Poisons Standard June 2021**: Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) No. 33, Part 2: Control on Medicines and Poisons, Section Seven / Appendix I Paint or Tinters

This document is available from the Australian Government Federal Register of Legislation web site at: https://www.legislation.gov.au/Details/F2021L00650

b) The following APAS documents are referenced in this document:

i. AP-D001 Rules Governing How APAS® Operates
ii. AP-D123 Restrictions on Ingredients in Product Formulations
iii. AP-D152 APAS® Participating Manufacturers and Resellers
iv. AP-D177 Rules Governing How Product Manufacturers participate in APAS®
v. AP-D181 Volatile Organic Compounds (VOC) Limits
vi. AP-D192 Rules Governing APAS® Product Certification Scheme
vii. AP-S2940 MIO or Aluminium Coating for the Protection of Steel Subject to Continuous Condensation

All APAS documents are available for download from the APAS website: https://vs.csiro.au/apas/documents/

All APAS specifications are available for download from the APAS website: https://vs.csiro.au/apas/specifications/

5 COMPOSITIONAL REQUIREMENTS

5.1 Binder

a) Although generally unrestricted, typically approved products will be either one or two-pack epoxies, or modified alkyds.

5.2 Volatiles

a) The volatile portion shall typically be comprised of hydrocarbons.
b) For VOC content restrictions, refer to APAS document AP-D181.

5.3 Pigmentation

a) The pigmentation shall be chosen to impart the properties detailed in clause 7, Table 1 below.

5.4 Colour

a) A high standard of decorative properties is not always required. These products are typically supplied in aluminium or MIO type finishes i.e., a metallic-like appearance.

6 PRODUCT APPROVAL REQUIREMENTS

6.1 General Requirements

a) The product and its application for approval shall comply with the relevant requirements of APAS document AP-D192 during the life of the approval.

6.2 Technical Requirements

a) The product shall comply with **all** the requirements of clause 7, Table 1 below.
b) Subject to compliance with all the requirements of this specification, the level of Approval appropriate to the application shall be given to the system.

6.3 Health and Safety Requirements

a) The manufacturer's Safety Data Sheet (SDS) must be studied closely prior to using the product and complied with during use of the product.
b) As products covered by this specification typically contain hydrocarbon solvents, the paint is considered flammable and should be stored away from all sources of heat or ignition.
c) Containers should be resealed immediately after use and good ventilation provided during use to minimise the risk of fire or explosion and the long-term toxic effects of absorption of the vapour into the lungs.
d) Care should be taken to avoid contact with the skin using protective clothing and barrier cream. All pumping equipment should be adequately earthed. A full-face air fed respirator should be used when spraying.
e) Products intended for sale in Australia shall comply with all the requirements of the SUSMP. Products intended for sale in other countries shall comply with all local WHS and environmental requirements.
f) The product shall comply with all requirements of clause 6.3 and 6.4 of APAS document AP-D192.

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7 TABLE 1: PERFORMANCE PROPERTIES

TEST	AS/NZS 1580 METHOD	REQUIREMENTS
Wet Paint Tests		
Preliminary Examination	103.1	To be readily reincorporated. Shall be free of coarse particles, gel and foreign matter.
Thinning or Mixing Properties	208.1	Using 10% of manufacturers recommended thinner there shall be no signs of incompatibility.
Viscosity	214.x	State method and record results.
Application Properties - Brushing - Rolling - Spraying	 205.1 205.3 205.2 or 205.4	Shall show satisfactory application properties and the dry film shall be free of defects.
VOC Content	APAS AP-D181	Refer to APAS document AP-D181 for method and limits. If the APAS specification is not listed on AP-D181, a declaration of VOC content **is still required**.
Dry Film Tests		
Surface Dry Condition	401.1	Not greater than 6 hours.
Hard Dry Condition (Mechanical Thumb Test)	401.6	Not greater than 16 hours.
Colour - Visual Comparison	601.1	Approximate match.
Finish	603.1	Shall be free of coarse particles, wrinkling or orange peel and have a uniform colour and appearance. An even flat to low gloss finish.
Reincorporation after Storage Degree of Setting	211.2 211.1 205.2 or 205.4	To comply with all the preceding requirements after 12 months storage at ambient temperature. Settling shall not fall below 6. In addition, the use of spray application shall produce a uniform finish typical of the product type.
Resistance to Weathering	457.1 (Cat 1) 481.1.7 481.1.8 481.1.9 481.1.10 481.3	After **72 months exposure** at all three exterior atmospheric exposure sites (listed in APAS document AP-D192,clause 12), the coating shall show no integrity failure i.e., at the end of 6 years, the ratings shall be: Checking 0 Cracking 0 Blistering 0 Flaking & Peeling 0 Corrosion 0

8 APPENDIX A

Document History

Status: Current
Version: 10
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Document Version No.:	Date Published:	Summary of Changes:
10	13-09-2021	• General format changes • Updated background information in clause 2 • Updated SUSMP information • Updated APAS website information
9	11-12-2020	• Addition of Appendix A Document History and removal of the Editorial Note previously used in specification versions • Updated document to the current format • Updated internal and external document references • Inclusion of VOC Content requirement to Table 1 Performance Properties • Addition of “People + Product = Protection” to Footer
8	17-11-2003	• Incorporated a general format update and editorial changes
7	21-07-2003	• Underwent a general update with clarification of compositional requirements in the light of the release of APAS specification 2940 for the water industry • Deleted reference to GPC numbering
6	11-04-2001	• Initiated the second stage of the move to new specification numbering with prominence given to the new number (previously GPC-C-29/10)