



## SINGLE PACK MOISTURE CURE URETHANE COATING FOR THE LONG-TERM PROTECTION OF STEEL

### 1 SCOPE

This specification applies to single pack moisture cure urethane coatings for application to steel structures on which optimum surface preparation can be achieved.

### 2 BACKGROUND

- To obtain a broad overview of the Australian Paint Approval Scheme (APAS), refer to APAS document AP-D001.
- To obtain an overview of restricted ingredients in APAS certified products, refer to APAS document AP-D123.
- To obtain the current list of APAS participating manufacturers (and suppliers) and resellers, refer to APAS document AP-D152.
- To obtain an overview of how to participate in the APAS, refer to APAS document AP-D177.
- 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

- This specification applies to single pack moisture cure urethane coatings for application to steel structures on which optimum surface preparation can be achieved.
- The systems are intended to provide a service life in excess of 10 years under Category C3 (Medium) atmospheric corrosivity conditions (refer systems MCU1 and MCU2 in Table 6.3 of AS 2312.1) or in situations where frequent maintenance is impractical.
- Where surface preparation is likely to be marginal and more highly surface tolerant coatings may be required, the manufacturer's technical / product data sheet should be consulted as some of these products are surface tolerant. Alternatively, reference should be made to APAS specification AP-S0156.

#### 3.2 Sub-Classes

- This specification incorporates the following subclasses:
  - 2930:** For atmospheric exposure
  - 2930F:** For freshwater immersion
  - 2930P:** For potable water immersion
  - 2930S:** For saltwater immersion
  - 2930T:** For hydrocarbon fuels

#### 3.3 Basis of this Specification

- This specification is based on AS/NZS 3750.18, with the following modification:
  - Increase in exterior durability requirements from 48 to 60 months
- Paints approved under this specification are referenced as Paint Reference Number (PRN) C40 of AS 2312.1.

### 4 REFERENCED DOCUMENTS

- The following standards are referenced in this document:
  - AS/NZS 1580** – Paints and related materials: Methods of test
  - AS 2312.1** – Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings – Part 1: Paint Coatings
  - AS/NZS 3750.18** – Paints for steel structures – Moisture cure urethane (single-pack) systems
  - AS/NZS 4020** – Testing of products for use in contact with drinking water
  - AS ISO/IEC 17025** - General requirements for the competence of testing and calibration laboratories

These documents may be purchased through the Reference Standards Australia website:

<https://www.standards.org.au/>

- 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>

- The following APAS documents are referenced in this document:
  - AP-D001 Rules Governing How APAS® Operates
  - AP-D123 Restrictions on Ingredients in Product Formulations
  - AP-D152 APAS® Participating Manufacturers and Resellers
  - AP-D177 Rules Governing How Product Manufacturers participate in APAS®
  - AP-D181 Volatile Organic Compounds (VOC) Limits
  - AP-D192 Rules Governing APAS® Product Certification Scheme
  - AP-S0156 Epoxy Mastic High Build Two-Pack Coating for Rusted Steel

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

- The binder shall typically be comprised of a single pack moisture cure urethane.

#### 5.2 Volatiles

- The volatile portion shall typically be comprised of hydrocarbons.



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- 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 8, Table 1 below.

### 5.4 Colour

- a) Products approved under this specification are normally only available in a wide range of colours.  
b) Where the decorative properties of these coatings are considered important, it is crucial that the appearance of the coating be maintained essentially throughout the life of the coating. Therefore, before other colours are used, purchasers should obtain the manufacturer's written assurance that the selected colour will have acceptable colour stability for the intended purpose.

## 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 8, Table 1 below.

### 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 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. It is anticipated that most of these products would be applied by operators in well ventilated spray booths or in the field by operators with adequate safety equipment.  
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.

## 7 APPENDIX A

### Guidelines for Approval of Coating Systems for Use in Potable Water

- 7.1 APAS requires that all products intended for use in contact with potable water shall be approved for such an end use by an appropriate authority.
- 7.2 Such approval is indicated by having a suffix **P** after the specification number e.g., AP-S2930P. The issued certificate of product approval will clearly identify the appropriate exposure condition.
- 7.3 In order to gain product approval, the appropriate evidence of suitability needs to be supplied:
- An AS ISO/IEC 17025 endorsed test report (NATA in Australia) from an approved authority indicating compliance with AS/NZS 4020 **Products for use in contact with drinking water**, refer below for approved testing authority, or
  - Details of a technical case history of at least 6 years duration indicating satisfactory performance in contact with drinking water. A letter from the asset owner shall be supplied stating:
    - The name of the product used, and
    - The nature of its use in a potable water application, and
    - The period during which it has been in continuous use, and
    - How well it has been performing
- 7.4 In Australia, the APAS recognised testing laboratory for AS/NZS 4020 is:
- Australian Water Quality Centre (AWQC)** –  
Business Unit of the South Australian Water Corporation (SA Water)  
NATA Accreditation No. 1115
- 250 Victoria Square  
ADELAIDE, South Australia, 5000
- Direct Lab Number: (08) 7424 1512  
General Enquiries: [producttesting@awqc.com.au](mailto:producttesting@awqc.com.au)
- Direct Contacts:  
Michael Glasson (Supervisor Product Testing)  
Email: [michael.glasson@awqc.com.au](mailto:michael.glasson@awqc.com.au)
- Peter Christopoulos (Senior Technical Officer – Product Testing)  
Email: [peter.christopoulos@awqc.com.au](mailto:peter.christopoulos@awqc.com.au)
- 7.5 Following any changes to the ingredients of the formulation or to the source of raw materials, the product shall be retested to confirm continued compliance with the Standard.



# SPECIFICATION AP-S2930



## SINGLE PACK MOISTURE CURE URETHANE COATING FOR THE LONG-TERM PROTECTION OF STEEL

8 TABLE 1: PERFORMANCE PROPERTIES

TEST	AS/NZS 1580 METHOD	REQUIREMENTS
General Requirements	<b>AS/NZS 3750.18</b>	Shall comply with <b>all</b> the requirements of <b>clause 2 Material Requirements</b> . <b>All</b> results shall be reported. <b>NOTE:</b> Listed below are test parameters in addition to, or in place of, those listed in the Australian Standard. Compliance to these tests is also required.
Thinning or Mixing Properties	208.1	Using 10% of manufacturers recommended thinner, there shall be no signs of incompatibility.
<b>Storage Properties</b>		
Degree of Setting	211.1	Settling shall not fall below 4.
Aged Application	205.2 or 205.4	In addition, the use of spray application shall produce a uniform finish typical of the product type.
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 <b>is still required</b> .
Resistance to Natural Weathering <b>ALL Sub-classes</b>	<b>AS/NZS 3750.18</b> 457.1	After <b>60 months exposure</b> at all 3 <b>atmospheric</b> exposure sites (listed in APAS document AP-D192, clause 12), the product shall comply with the ratings in AS/NZS 3750.18 Table 2 (48 months).
Water Immersion <b>2930F, 2930P and 2930S only</b>		After <b>60 months</b> at the appropriate <b>immersion</b> exposure test site(s) (refer to APAS document AP-D192, clause 12), the product shall comply with the ratings in AS/NZS 3750.18 Table 2 (48 months).
Resistance to Immersion in Hydrocarbon Fuels <b>2930T only</b>		When immersed for 2 hours at ambient temperature in a solution of 75% n-heptane and 25% toluene, the coating shall show no sign of softening, lifting, crazing or blistering.
Resistance to Immersion - Potable Water <b>2930P only</b>	<b>AS/NZS 4020</b>	For potable water approval, the product shall pass the resistance to immersion in freshwater requirements detailed above. In addition, a potable water compliance certificate, as detailed in clause 7, Appendix A shall be provided.



# SPECIFICATION AP-S2930



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### 9 APPENDIX B

#### Document History

Status: Current  
Version: 3  
Date Published: 14-09-2021

Document Version No.:	Date Published:	Summary of Changes:
3	14-09-2021	<ul style="list-style-type: none"><li>• General format changes</li><li>• Updated background information in clause 2</li><li>• Updated SUSMP information</li><li>• Updated APAS website information</li></ul>
2	22-12-2020	<ul style="list-style-type: none"><li>• Addition of Appendix B Document History and removal of the Editorial Note previously used in specification versions</li><li>• Updated document to the current format</li><li>• Updated internal and external document references (including current AWQC information)</li><li>• Inclusion of VOC Content requirement to Table 1 Performance Properties</li><li>• Addition of "People + Product = Protection" to Footer</li></ul>
1	10-12-2003	<ul style="list-style-type: none"><li>• Incorporated a general format update</li><li>• Included tests for immersion resistance in Table 1</li></ul>
0	16-12-2002	<ul style="list-style-type: none"><li>• Original document</li></ul>