

## CATALYSED POLYESTER COATING FOR PROTECTION OF STEEL

### 1 SCOPE

This specification applies to ultra-high build catalysed polyester and vinylester coatings (two-pack) 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 applies to ultra-high build catalysed polyester and vinylester coatings (two-pack) for application to steel structures on which optimum surface preparation can be achieved.
- b) The systems are intended to provide a service life in excess of 15 years under Category C5-I (Very high Industrial) or Category C5-M (Very high Marine) corrosivity conditions (refer to AS 2312.1) or in situations where frequent maintenance is impractical.

#### 3.2 Sub-Classes

- a) This specification incorporates the following subclasses:
  - i. **2917**: For atmospheric exposure
  - ii. **2917F**: For freshwater immersion
  - iii. **2917P**: For potable water immersion
  - iv. **2917S**: For saltwater immersion

#### 3.3 Basis of this Specification

- a) This specification is not based on any know standard or specification.
- b) Paints approved under this specification conform to Paint Reference Number (PRN) C41 and C42 of 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

- iii. **AS/NZS 4020** – Testing of products for use in contact with drinking water
- iv. **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/>

- v. **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

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

### 5 COMPOSITIONAL REQUIREMENTS

#### 5.1 Binder

- a) The binder composition is not restricted by this specification and shall be chosen to impart the properties detailed in clause 8, Table 1 below.

#### 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 8, Table 1 below.

#### 5.4 Colour

- a) Products approved under this specification are normally only available in a limited range of colours.



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### 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-S2917P. 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.



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## CATALYSED POLYESTER COATING FOR PROTECTION OF STEEL

8 TABLE 1: PERFORMANCE PROPERTIES

TEST	AS/NZS 1580 METHOD	REQUIREMENTS
<b>For EACH Component</b>		
Preliminary Examination	103.1	Shall be free of coarse particles, gel and foreign matter.
Reincorporation after Storage	211.2	After 12 months ambient storage, when the aged samples are mixed and applied as per the manufacturer's directions, the mixture shall be readily reincorporated and shall show satisfactory application properties. The dry film shall be free of defects and equal in appearance to the applied un-aged sample.
Aged Application	205.4	
Degree of Setting	211.1	
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> .
<b>Wet Mixed Paint Tests</b>		
Thinning or Mixing Properties	208.1	Using 10% of manufacturers recommended thinner, there shall be no signs of incompatibility.
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.
<b>Dry Film Tests</b>		
Finish	603.1	Shall be free of coarse particles, wrinkling or orange peel and have a uniform colour and appearance.
Colour - Visual Comparison	601.1	Approximate match.
Specular Gloss (60°)	602.2	To be recorded.
Surface Dry Condition	401.1	To be recorded.
Hard Dry Condition (Mechanical Thumb Test)	401.6	To be recorded.



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## CATALYSED POLYESTER COATING FOR PROTECTION OF STEEL

TEST	AS/NZS 1580 METHOD	REQUIREMENTS										
<b>Dry Film Tests (Cont.,)</b>												
Potable Water <b>Sub-class 2917P only</b>	<b>AS/NZS 4020</b>  481.1.7 481.1.8 481.1.9 481.1.10 481.3	A certificate of compliance shall be provided from an accredited laboratory, refer to clause 7, Appendix A above.  The coating shall be subjected to 72 months immersion in fresh water and shall show no integrity failure i.e., at the end of 6 years, the ratings shall be:  <table style="width: 100%; border: none;"> <tr><td style="width: 80%;">Checking</td><td style="text-align: right;">0</td></tr> <tr><td>Cracking</td><td style="text-align: right;">0</td></tr> <tr><td>Blistering</td><td style="text-align: right;">0</td></tr> <tr><td>Flaking and Peeling</td><td style="text-align: right;">0</td></tr> <tr><td>Corrosion</td><td style="text-align: right;">0</td></tr> </table> <p><b>NOTE:</b> CLASS II (Interim) approval may be given after 4 years satisfactory exposure.</p>	Checking	0	Cracking	0	Blistering	0	Flaking and Peeling	0	Corrosion	0
Checking	0											
Cracking	0											
Blistering	0											
Flaking and Peeling	0											
Corrosion	0											
Fresh and Salt Water Immersion <b>Sub-class 2917F and 2917S only</b>	481.1.7 481.1.8 481.1.9 481.1.10 481.3	The coating shall be subjected to <b>72 months immersion</b> in either salt or fresh water (as appropriate) and shall show no integrity failure i.e., at the end of 6 years, the ratings shall be:  <table style="width: 100%; border: none;"> <tr><td style="width: 80%;">Checking</td><td style="text-align: right;">0</td></tr> <tr><td>Cracking</td><td style="text-align: right;">0</td></tr> <tr><td>Blistering</td><td style="text-align: right;">0</td></tr> <tr><td>Flaking and Peeling</td><td style="text-align: right;">0</td></tr> <tr><td>Corrosion</td><td style="text-align: right;">0</td></tr> </table> <p><b>NOTE:</b> CLASS II (Interim) approval may be given after 4 years satisfactory exposure.</p>	Checking	0	Cracking	0	Blistering	0	Flaking and Peeling	0	Corrosion	0
Checking	0											
Cracking	0											
Blistering	0											
Flaking and Peeling	0											
Corrosion	0											
Resistance to Weathering <b><u>ALL</u> Sub-classes</b>	457.1 (Cat 1)  481.1.7 481.1.8 481.1.9 481.1.10 481.3	After <b>72 months exposure</b> at all 3 atmospheric 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:  <table style="width: 100%; border: none;"> <tr><td style="width: 80%;">Checking</td><td style="text-align: right;">0</td></tr> <tr><td>Cracking</td><td style="text-align: right;">0</td></tr> <tr><td>Blistering</td><td style="text-align: right;">0</td></tr> <tr><td>Flaking and Peeling</td><td style="text-align: right;">0</td></tr> <tr><td>Corrosion</td><td style="text-align: right;">0</td></tr> </table> <p><b>NOTE:</b> CLASS II (Interim) approval may be given after 4 years satisfactory exposure.</p>	Checking	0	Cracking	0	Blistering	0	Flaking and Peeling	0	Corrosion	0
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### 9 APPENDIX B

#### Document History

Status: Current  
Version: 10  
Date Published: 14-09-2021

Document Version No.:	Date Published:	Summary of Changes:
10	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>
9	17-12-2020	<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>
8	17-11-2003	<ul style="list-style-type: none"><li>• Removed reference to GPC and incorporated a general format update</li></ul>
7	23-01-2002	<ul style="list-style-type: none"><li>• Corrected the omission of an exterior durability evaluation</li></ul>
6	23-04-2001	<ul style="list-style-type: none"><li>• Initiated the second stage of the move to new specification numbering with prominence given to the new number (previously GPC-C-29/17)</li></ul>