

ETCH PRIMER FOR ZINC AND ZINC/ALUMINIUM COATED METALS

1 SCOPE

This specification applies to etch primer coatings for galvanised steel and zinc / aluminium coated steel.

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

- Products approved under this specification are etch or wash primers designed to be used as a pre-treatment primer to improve the adhesion of paint systems applied to galvanised steel, aluminium alloys and other difficult to coat metal substrates. They are applied as a very thin coating, sometimes transparent and can also be used on steel prior to the application of vinyl and other coatings.
- Preferably applied by conventional air spray as a very thin wet coat on clean metal. Dry film thickness $\leq 25\mu\text{m}$.
- They can generally be overcoated after 1 hour and should be overcoated before becoming wet with dew or rain.
- Historically, these products were translucent or transparent. Some of these products are still available and should not be applied to achieve obliteration of the substrate. Non-translucent etch primers are also available.

3.2 Sub-Classes

- This specification incorporates the following sub-classes:
 - 0035/1:** Two pack etch primer
 - 0035/2:** One pack etch primer, chromate-free

3.3 Basis of this Specification

- This specification is based on AS/NZS 3750.17 with the following modifications:
 - An outdoor durability requirement (4 years) has been added
 - A corrosion resistance test (salt droplet) has been added
- Products approved under this specification comply with Paint Reference Number (PRN):
 - C10 of AS/NZS 2312 for 0035/1
 - B13 of AS/NZS 2311 for 0035/2

4 REFERENCED DOCUMENTS

- The following standards are referenced in this document:
 - AS/NZS 1580** – Paints and related materials: Methods of test.
 - AS/NZS 2311** – Guide to the painting of buildings
 - AS/NZS 2312** - Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings
 - AS/NZS 3750.17** – Paints for steel structures, Part 17: Etch primers (Single pack and two-pack)

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

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

5 COMPOSITIONAL REQUIREMENTS

5.1 Binder

- The binder, although not restricted, will typically be comprised of a vinyl butyral resin. Of primary importance is the compliance with the technical requirements detailed in clause 7, Table 1 below.

5.2 Volatiles

- The volatile portion, although not restricted will typically be comprised of chemical solvents such as alcohols.
- For VOC content restrictions, refer to APAS document AP-D181.



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5.3 Pigmentation

- a) There are no restrictions placed on the type(s) of pigment used, with the exception that they shall be non-toxic and anti-corrosive and comply with the requirements of the SUSMP. Of primary importance is the compliance with the technical requirements detailed in clause 7, Table 1 below.

5.4 Colour

- a) Colour is not a key element for these products. They are normally of a translucent yellow/green colour or similar but coloured variants may also be available.

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) The manufacturers own quality control schedule of tests and limits shall be allowed subject to the approval of the Executive Officer (EO), APAS.
- c) On request, the EO may request the results of the tests for a batch and compare these with previous batches.
- d) Density and non-volatile content by weight (NVCW) figures for each production batch of the approved product shall be within $\pm 3\%$ of the actual (not theoretical) figures quoted in the original product approval submission (APAS document AP-D139).
- e) 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) 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.
- c) 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															
General Requirements	AS/NZS 3750.17	Shall comply with all the requirements of clause 2 Material Requirements . All results shall be reported.															
Thinner Compatibility	208.1	When mixed with the recommended type and quantity of thinner, there shall be no signs of separation.															
Resistance to Natural Weathering	AS/NZS 3750.17² 481.1.7 481.1.8 481.1.9 481.1.10	<p>Panels prepared as per Appendix F² shall show the following ratings after 48 months exposure at a coastal marine site:</p> <table border="1"> <thead> <tr> <th></th> <th>36 months</th> <th>48 months</th> </tr> </thead> <tbody> <tr> <td>Checking</td> <td>0</td> <td>0</td> </tr> <tr> <td>Cracking</td> <td>0</td> <td>0</td> </tr> <tr> <td>Blistering</td> <td>0</td> <td>0</td> </tr> <tr> <td>Flaking & Peeling</td> <td>0</td> <td>0</td> </tr> </tbody> </table>		36 months	48 months	Checking	0	0	Cracking	0	0	Blistering	0	0	Flaking & Peeling	0	0
	36 months	48 months															
Checking	0	0															
Cracking	0	0															
Blistering	0	0															
Flaking & Peeling	0	0															
Resistance to Corrosion - Salt Droplet Test ³	452.2	No blistering or adhesion loss.															
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.															

Note:

² Due to the inherent difficulty of achieving successful long-term coating of galvanised iron, the requirement to test on galvanised steel in Appendix F of AS/NZS 3750.17 is waived.

³ The salt droplet test shall be performed on aluminium panels utilising an epoxy gloss enamel applied over the etch primer.



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8 APPENDIX A

Document History

Status: Current
Version: 12
Date Published: 26-08-2021

Document Version No.:	Date Published:	Summary of Changes:
12	26-08-2021	<ul style="list-style-type: none">• General format change to clause 1, 5.1 and 6.2 b)• Updated background information in clause 2• Updated SUSMP information• Updated APAS website information
11	09-11-2020	<ul style="list-style-type: none">• 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
10	12-06-2009	<ul style="list-style-type: none">• Clarified clause 3 and added Notes 2 & 3
9	06-01-2009	<ul style="list-style-type: none">• Deleted sub class 0035/3 and document updated to the new format
8	08-04-2003	<ul style="list-style-type: none">• Deleted reference to GPC numbering, incorporated a general format update and incorporated the weathering requirement from APAS 0017
7	30-07-2001	<ul style="list-style-type: none">• Initiated the second stage of the move to new specification numbering with prominence given to the new number (previously GPC-P-35)