

INTERIOR LATEX PAINT, LOW ODOUR, LOW VOC (BUILDINGS)

1 SCOPE

This specification applies to paints designed for use in building interiors where low odour and low VOC is a requirement e.g., in aged care facilities, hospitals and schools.

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 provides for a low odour, water thinned latex finishing paint with low volatile organic compound (VOC) content, for the interior of buildings. Available from stock in a manufacturer's colour range (MCR).
- b) May be applied direct or, if necessary, over an appropriate sealer to cement, plaster and masonry. May be applied, over the appropriate primer, to timber or metal surfaces. Application by brush, roller or spray in two coats, typically at a dry film thickness of 20 - 35µm. Surface dry time around 30 minutes depending on the weather conditions. Handling time 2 hours.
- c) Intended for interior application where paint odours during application and drying may cause distress such as in nursing homes, hospitals and high density living.
- d) This product may also find use where historic artefacts or other sensitive items are stored, and which might be impaired by organic volatiles.

3.2 Sub-Classes

- a) This specification incorporates the following sub-classes:
 - i. **0215/1:** Gloss finish
 - ii. **0215/2:** Semi-gloss finish
 - iii. **0215/3:** Low gloss finish
 - iv. **0215/4:** Washable flat finish
 - v. **0215/5:** Ceiling flat finish
 - vi. **0215/6:** Sealer undercoat

3.3 Basis of this Specification

- a) This specification is based on and complies with all the requirements of the following:
 - i. **0215/1:** AS 3730 Part 12
 - ii. **0215/2:** AS 3730 Part 2

- iii. **0215/3:** AS 3730 Part 3
- iv. **0215/4:** AS 3730 Part 1
- v. **0215/5:** AS 3730 Part 1
- vi. **0215/6:** AS 3730 Part 18

- b) Products approved under this specification comply with the following Paint Reference Numbers (PRNs) of AS/NZS 2311:
 - i. **0215/1:** B9
 - ii. **0215/2:** B8
 - iii. **0215/3:** B7
 - iv. **0215/4:** B6
 - v. **0215/5:** B6
 - vi. **0215/6:** B17A

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/NZS 2311** – Guide to the painting of buildings
 - iii. **AS 3730.1** – Guide to the properties of paints for buildings – Latex – Interior – Flat
 - iv. **AS 3730.2** – Guide to the properties of paints for buildings – Latex – Interior – Semi-gloss
 - v. **AS 3730.3** – Guide to the properties of paints for buildings – Latex – Interior – Low gloss
 - vi. **AS 3730.12** – Guide to the properties of paints for buildings – Latex – Interior – Gloss
 - vii. **AS 3730.18** – Guide to the properties of paints for buildings – Undercoat/sealer – Latex – Interior/exterior

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

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

- viii. **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/>

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5 COMPOSITIONAL REQUIREMENTS

5.1 Binder

- a) The binder shall typically be comprised of polymerised organic compounds in aqueous dispersion.

5.2 Volatiles

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

5.3 Pigmentation

- a) There is no restriction 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.
b) Of primary importance is that the choice of pigmentation shall result in compliance with the technical requirements detailed in clause 10, Table 1 below.

5.4 Colour

- a) Except for sub-class AP-S0215/6, products approved under this specification are normally available in a wide range of colours known as the manufacturer's colour range or MCR. Refer to the manufacturer's product or technical data sheet or colour card for details.

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 10, 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) 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.

7 APPENDIX A

Polishing Test

7.1 Scope:

This method is intended to simulate cleaning of wall surfaces and to exclude products which **polish** readily, with the resultant shiny and patchy appearance of a wall surface viewed at low angle under low angle incident lighting conditions.

7.2 Equipment:

- A cork sanding pad of the same general dimensions as detailed in AS/NZS 1580.459.1 (Resistance to Washing)
- Medical gauze (Handy elastic gauze No.76044/1 from Beiersdorf Aust Ltd is suitable)
- Gardner scrub machine (or equivalent)
- Tap water
- Leneta test panels approx. 150 x 300 mm

7.3 Procedure:

- This test largely follows the method detailed in AS/NZS 1580.459.1 (Resistance to Washing) with changes to the procedure as detailed below.
- Prepare test panel by drawing down the test paint on the Leneta chart using a #32 wire wound bar. Other equivalent alternative methods of applying a film may be used.
- Allow the test panel to dry for 7 days at ambient temperature.
- Measure and record the gloss using a 60° gloss head.
- Substitute the cork sanding block for the foam pad.
- Wrap at least 4 layers of the medical gauze around the block in the direction of scrubbing.
- Soak the gauze in tap water for 10 minutes (detergent is not used).
- Operate the scrubbing machine continuously for 200 cycles.
- On completion of the 200 cycles, allow panel to dry for 2 hours and determine the gloss level of the scrubbed area using a 60° gloss head.

7.4 Reporting:

Report the change in 60° gloss.

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8 APPENDIX B**Colourant Acceptance****8.1 Scope:**

This method details the test method to be utilised to demonstrate a satisfactory level of colour development through the addition of machine colourants.

8.2 Equipment:

- i. 500 mL of each tinting base in the MCR
- ii. A machine colourant tinting system
- iii. A sealed cardboard test panel of approx. size 150 x 100 mm for each colour

8.3 Procedure:

- i. **Selection of colour:** The colour shall be selected using the same process as detailed in APAS document AP-D192 Appendix A, clause A3:
 - a. Where the colourant system is well established in the Australasian marketplace, one colour per tint base as detailed in Table A1.
 - b. Where the colourant system is new to the region, sample preparation and colourant testing as per clause A3 a) i. of the above document shall be conducted.
- ii. Test panels are then prepared as follows:
 - a. To a sealed cardboard panel apply one coat of test paint (typically by 0.032 wire wound bar coater) and allow to dry (may be forced dry or allowed to dry overnight).
 - b. Apply a further coat of test paint to the cardboard panel using the same wire wound coater.
 - c. Using a finger with gentle pressure, immediately rub an area of the film about 30 mm in diameter in a circular motion until a slight tackiness is detected. Allow the panel to dry overnight.
- iii. The difference in colour between the two sections on the panel shall not exceed a rating of 1 when assessed using test method AS/NZS 1580.481.1.12.
- iv. Test panels of dimensions 100 x 150 mm demonstrating the colour acceptance and including details of each colourant included in each panel, are to be supplied to APAS.

9 APPENDIX C**Odour Comparison****9.1 Scope:**

This procedure provides a method for the subjective comparison of odour produced by a coating during its drying phase. It is intended to simulate the odour present in an enclosed room which has had the walls and ceiling painted.

9.2 Equipment:

- i. Two 20 L pails with appropriate lids. Each lid shall have a hole 40 – 50 mm diameter located centrally. A removable plug shall seal each test unit except during odour assessment - a domestic bathroom plug is suitable.
- ii. Two sealed paper brush-out panels approx. 300 x 450 mm - Leneta chart would suffice.
- iii. Test paint and control paint. The control shall be a standard water-based paint from the manufacturer's range of the same gloss level and of premium retail quality, approved to APAS specification AP-S0260.

9.3 Procedure:

- i. Apply one coat of the test paint at the recommended spreading rate (or 16 m²/L if none specified) to one brush-out chart as quickly as practicable. Place the chart inside one 20 L container and fix to the inside with adhesive tape. Place the lid with the plug-in position on the 20 L pail.
- ii. Repeat with the other pail and chart using the control paint at its recommended spreading rate.
- iii. Allow both containers to remain undisturbed at routine laboratory conditions according to AS/NZS1580.101.4 for a period of 4 hours.
NOTE: The lighting requirements of AS/NZS 1580.101.4 do not apply.
- iv. Remove the plug from the lid of the Control paint and through the hole in the lid smell the contents briefly. Replace the plug. Rate the odour according to 9.3 vii. below.
- v. Immediately repeat the odour assessment using the test paint and rate its odour according to 9.3 vii. below.
- vi. Repeat 9.3 iv. and 9.3 v. using two other operators.
- vii. On a scale of 0 – 5 with 0 being low and 5 being high, rate the odour for the following characteristics:
 - a. Degree of offensiveness of odour
 - b. Level of odour present
- viii. Thus, each operator will provide four numerical results (2 test and 2 control).
- ix. Add all the ratings for the test paint for all operators (a total of 6 results) and calculate the average total score for the test paint. Repeat for the Control paint.
- x. Calculate the ratio of Control average to Test average.



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10 TABLE 1: PERFORMANCE PROPERTIES

TEST	AS/NZS 1580 METHOD	REQUIREMENTS
General Requirements		
General Requirements	AS 3730.X	Shall comply with all the requirements of clause 5 Typical Properties and Characteristics and Table 1 of the applicable Standard as defined in clause 3.3 a) above (except for the washability test for sub-class AP-S0215/5). All test results shall be reported.
Non-volatile Content by Volume (Volume Solids)	301.2	White product only: 0215/1: Minimum 32%. 0215/2: Minimum 34%. 0215/3: Minimum 36%. 0215/4, 0215/5 & 0215/6: Not specified. <ul style="list-style-type: none"> Volume solids may be determined theoretically from raw material data except where solid constituents incorporate sealed air voids.
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.
Wet Paint Tests		
Viscosity - High Shear Viscosity - Low Shear Viscosity	214.3 214.x	0.1 – 0.4 Pa.s. To be recorded.
Storage Stability		In addition to the requirements stated in AS 3730.X, the application of the aged sample shall produce a smooth film of uniform colour and appearance when tested in accordance with AS 1580.205.1 & 3.
Odour Assessment	Clause 9, Appendix C	After 4 hours, the ratio of Control to Test Paint average rating shall not be less than 2.
Dry Paint Tests		
Surface Dry Condition	401.1	To be recorded.
Finish	603.1	Shall be free of coarse particles, wrinkling or orange peel and have a uniform colour and appearance.
Polishing Test	Clause 7, Appendix A	Change in gloss of scrubbed area for: 0215/1, 0215/2 and 0215/3: Shall be ≤ 4 gloss units at 60°. 0215/4: shall be ≤ 4 gloss units at 85°. 0215/5 and 0215/6: Not applicable.
Colourant Acceptance NOT required for sub-class 0215/6	Clause 8, Appendix B	Colour difference ≤ 1.



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11 APPENDIX D

Document History

Status: Current
Version: 13
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Document Version No.:	Date Published:	Summary of Changes:
13	10-09-2021	<ul style="list-style-type: none">• General format changes• Updated background information in clause 2• Updated SUSMP information• Updated APAS website information
12	01-12-2020	<ul style="list-style-type: none">• Addition of Appendix D 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
11	04-09-2013	<ul style="list-style-type: none">• New format• Aligned Polishing test method in Appendix A and Table 1 with AP-VS0260.• Added Clause 3.2
10	-	<ul style="list-style-type: none">• -
9	20-04-2005	<ul style="list-style-type: none">• Corrected a reference error in clause C3.4
8	07-04-2005	<ul style="list-style-type: none">• Expanded the available range of paints to include gloss, satin and flat versions• Added Appendix C
7	23-10-2003	<ul style="list-style-type: none">• Deleted reference to GPC and incorporated a general format update
6	12-02-2001	<ul style="list-style-type: none">• Initiated the second stage of the move to new specification numbering with prominence given to the new number (old specification number GPC-L-215)