

Australian Standard[®]

**Metal finishing—Thermoset powder
coatings for architectural
applications**

This Australian Standard was prepared by Committee MT/9, Metal Finishing. It was approved on behalf of the Council of Standards Australia on 20 April 1989 and published on 1 November 1989.

The following interests are represented on Committee MT/9:

Aluminium Development Council
Australasian Institute of Metal Finishing
Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
Department of Defence
Metal Trades Industry Association of Australia
Royal Australian Chemical Institute
Society of Automotive Engineers, Australasia
Telecom Australia
University of Queensland

Additional interests participating in preparation of Standard:

Powder coating industry

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PREFACE

This Standard was prepared under the direction of the Standards Australia Committee on Metal Finishing at the request of industry to provide test procedures and performance requirements for powder-coated aluminium products for architectural applications.

In developing this Standard, cognizance was taken of the following documents issued by the Architectural Aluminium Manufacturers Association (US):

AAMA 603.8 *Voluntary performance requirements and test procedures for pigmented organic coatings on extruded aluminium*

AAMA 605.2 *Voluntary specification for high performance organic coatings on architectural extrusions and panels.*

In addition, the following British Standard was reviewed, and its tests for resistance to mortar and permeability of coating were adopted:

BS 6496 *Specification for powder organic coatings for application and stoving to aluminium alloy extrusions, sheet and pre-formed sections for external architectural purposes, and for the finish on aluminium alloy extrusions, sheet and pre-formed sections coated with powder organic coatings.*

An investigation into the possibility of including a definitive test for curing, carried out during the preparation of this Standard, concluded that no simple test was available at that time.

Statements expressed in mandatory terms in Notes to Tables and Figures are deemed to be requirements of this Standard.

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STANDARDS AUSTRALIA

Australian Standard

Metal finishing—Thermoset powder coatings for architectural applications

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard specifies performance requirements for thermoset powder coatings applied to aluminium extrusions or panelling intended for architectural applications, and sets out relevant test procedures.

NOTES:

1. Appendix A contains advice and recommendations on information which should be supplied by the purchaser at the time of enquiry or order.
2. Advice on the pretreatment of surfaces prior to coating is given in Appendix B.
3. Guidance on atmospheric environments and factors which require consideration are given in Appendix C.
4. Information on weathering performance of powder-coated aluminium products is given in Appendix D.
5. Information on maintenance of coatings is given in Appendix E.
6. Advice on handling and temporary protection during transportation and installation is given in Appendix F.

1.2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS	
1315	Portland cement
1580	Methods of test for paints and related materials
1580.101.5	Method 101.5: Conditions of test, temperature and humidity control
1580.405.1	Method 405.1: Determination of pencil hardness of paint film
1580.408.4	Method 408.4: Adhesion (cross-cut)
1580.457.1	Method 457.1: Resistance to outdoor weathering
1580.481.1	Method 481.1: Assessment of individual defects of exposed films
1580.481.2	Method 481.2: Assessment of blistering of paint films
1580.483.1	Method 483.1: Resistance to artificial weathering (carbon-arc type instruments)
1580.602.2	Method 602.2: Specular gloss
1635	Methods of testing pressure sensitive adhesive tape
1635.3.1	Method 3.1: Adhesion strength
1672	Building limes
2310	Glossary of paint and painting terms
2312	Guide to the protection of iron and steel against exterior atmospheric corrosion
2331	Methods of test for metallic and related coatings.
2331.3.1	Method 3.1: Corrosion and related property tests—Neutral salt spray (NSS) test

2483 Metal finishing—Recommended sampling plans for the inspection and testing of coatings

2633 Guide to the specification of colours

AAMA

610.1 Voluntary guide specification for cleaning and maintenance of painted aluminium extrusions and curtain wall panels

ASTM

D 2247 Practice for testing water resistance of coatings in 100 percent relative humidity

G 53

Recommended practice for operating light- and water-exposure apparatus (fluorescent UV—condensation type) for exposure of non-metallic materials

BS

1199 & 1200 Specifications for building sands from natural sources

1746

Specification for domestic pressure cookers

3900

Methods of test for paints
Part C5 : Determination of film thickness
Part F3 : Resistance to artificial weathering (enclosed carbon arc)

1.3 DEFINITIONS. For the purpose of this Standard, the definitions given in AS 2310 and those below apply.

1.3.1 Base aluminium—aluminium or aluminium alloy products in the form of sheet, coil, cut lengths, strip or extruded sections.

1.3.2 Chemical conversion treatment—modification to an aluminium surface by chemical treatment with chromate ions, or chromate and phosphate ions, without the use of an applied electric current.

1.3.3 Powder-coated aluminium—pretreated aluminium finished with a powder coating.

1.3.4 Pretreated aluminium—base aluminium to which an appropriate chemical conversion treatment has been applied.

1.3.5 Significant surface—that part of the surface which is required to be covered by the coating, and which is essential to the appearance and serviceability of the item.