

TECHNICAL BULLETIN



AUSTRALIAN ALUMINIUM FINISHING

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A POWDER COATER SHOULD BE DOING A WHOLE LOT MORE THAN “JUST COAT METAL”

AAF applies Powder Coating to Aluminium with World's Best Practice. This is formally recognised by our Qualicoat Licenses (No's; 2102, 2103 & 2109) for our branches as well as Approved Applicator Status from the major powder manufacturers.



To achieve these formal benchmarks, AAF processes aluminium with the following specifications & is randomly audited at least two times per year by a third party;

- Multi-Stage Chemical pre-treatment by Qualicoat Approved System (Qualicoat & AS3715)
- De-min Final Ultra Rinse (Qualicoat & AS3715)
- Aluminium Drying Process (Qualicoat & AS3715)
- Powder Application (Qualicoat & AS3715)
- Powder Stoving & Curing (Qualicoat & AS3715)
- Adhesion & Mechanical Properties Testing (Qualicoat & AS3715)
- Appearance, Colour & Thickness Measurements (Qualicoat & AS3715)

Across Australia, there are only a handful of Powdercoat Applicators who can boast to use an equivalent standard of processes in finishing Architectural Aluminium.

It is estimated that there are well over 1,300 powder coat applicators across Australia. As a result, 99% of Powder Coaters do not have processes in place that are recognised & 3rd party certified to be best practice for Architectural Aluminium.

The majority of these other coaters are termed 'general job shops' & apply powder over a variety of metals including mild steel, galvanised surfaces amongst others. One of the risks for a customer is that, once an item is "Powder Coated" the part comes out looking nice and new irrespective of whether proper processes have been applied or not. It is important to recognise that "a layer of paint can hide a lot of sins".

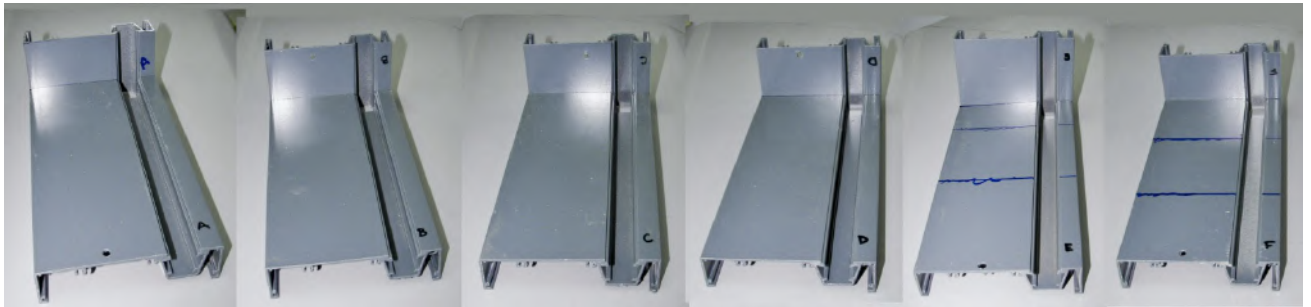
In order to help demonstrate this, the following trial was conducted.

SAMPLE FABRICATION AND PREPARATION

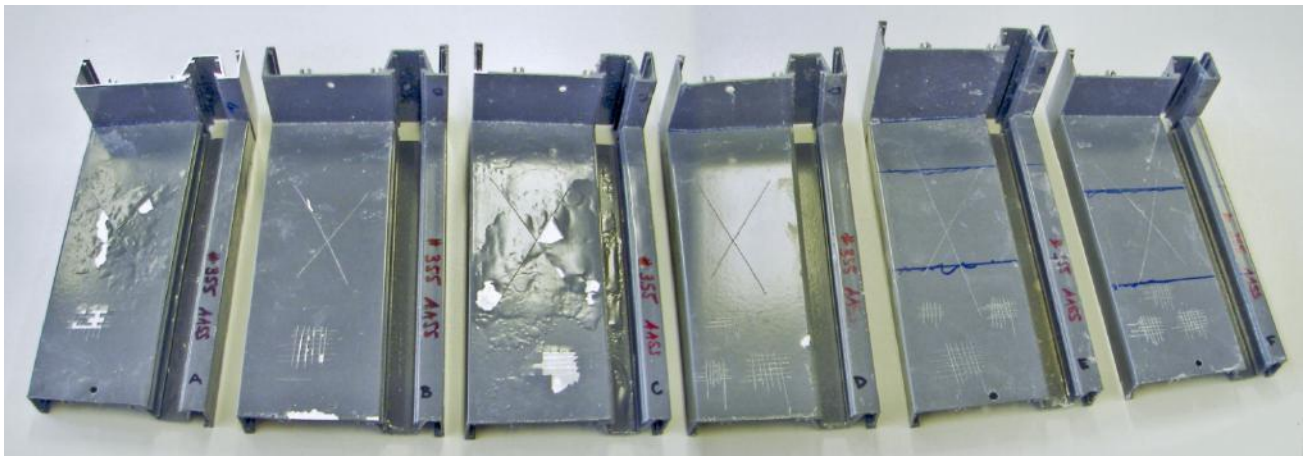
One length of mill finish aluminium frame extrusion was cut into six longer and six shorter lengths. Each of one short and one long length was then fastened together using two stainless steel screws. Each assembled sample was marked A-F. Samples were sent to various powder coat plants (including AAF) and pre-treated using their standard processing method which is representative of systems typically offered by the various coaters.

POWDER COATING

Subsequently, all the samples were brought to the one plant and all samples were coated with the same brand name powder coat in the "Berry Grey" colour and stoved cured at once. Samples can be seen labelled A-F, left to right.



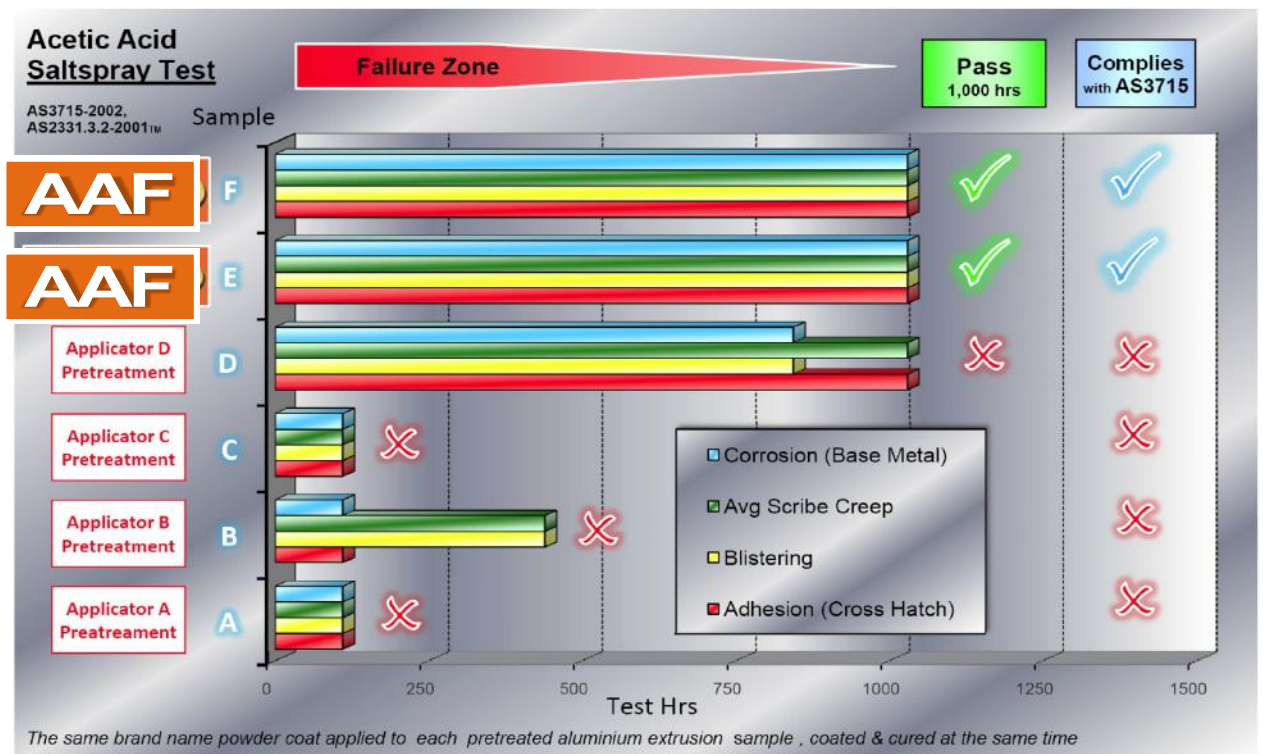
SAMPLES AFTER 1000 HR ACETIC ACID SALT SPRAY TEST



QUANTIFYING THE RESULTS

Acetic Acid Salt Spray (ASS) Test - Corrosion and related property tests - AS3715-2002, AS2331.3.2-2001™

The chart below depicts the corrosion resistance performance of the supplied parts up to 1000 hours Acetic Acid Salt Spray or till failure for the four sub-specifications of the test.



Finishing for the architectural market is a specialised profession as the finish needs to protect and enhance the architectural components for a long time.

REFERENCE GUIDE OF POWDER GRADES, MAIN PERFORMANCE STANDARDS AND CONDITIONS OF WARRANTY

Powder Coat Grade & Warranty Guide		General Industrial Polyester	Standard Architectural Polyester	High Grade Architectural Polyester	Fluoro-Polymer (PVDF)	Powder Grades
BCA Classes [#]	Examples of Building Types	Dulux Alphatec, Interpon TC	Dulux Duralloy, Rapidcure & Interpon D1000	Dulux Duratec, Interpon D2015	Dulux Fluoroset, Interpon D3020	Example Powders
1 or 10 only	Single Residence Dwelling	Not Warranted	Up to 7-10 Yrs* only if coated by Approved Applicator	Up to 15 Yrs* only if coated by Approved Applicator	Up to 20 Yrs* only if coated by Approved Applicator	Colour / Gloss Performance Warranty*
2 to 9	Commercial, Apartments, Public.	Not Warranted	Not Warranted			
*Refer to NCC, Building Code of Australia (BCA)		None	AAMA 2603	AAMA 2604	AAMA 2605	Meets AAMA Specification
AAF is a "Platinum " Approved Applicator for All Architectural Powder Coatings from Dulux & Interpon as well as being a Qualicoat Licenced Coater. Licence No's: 2102, 2103 & 2109.		N/A	1 Year	5 Years	10 Years	Florida Exposure
		N/A	1,500 Hrs	3,000 Hrs	4,000 Hrs	Salt Spray & Humidity
AAMA is the American Architectural Manufacturers Association Performance Standard to which Powder suppliers manufacturer their High Grade Powders in accordance with.						
*Conditions Apply & only if coated by Approved Applicator						

With reference to summary table above, as per the fine print in their terms, the major paint Manufacturers of Powder (**Dulux & Akzo-Nobel**) **will not provide performance warranty for powder coating on BCA Class 2-9 Buildings** (E.g. Retail, Office, Commercial, Public Buildings, Apartments...etc.) when coated in **Standard Powder Coat** &/or not finished by an Approved Applicator such as AAF.

BUILDING CLASSES - BUILDING CODE OF AUSTRALIA FROM NATIONAL CONSTRUCTION CODE

The BCA classifies buildings by their use. A building may be made up of a number of classes if it has a mixed use. The BCA identifies the following building classes:

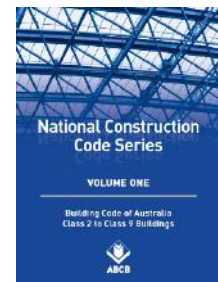
Class 1(a) - a single dwelling or attached dwellings (e.g.: a terrace, duplex, etc.) where each dwelling is separated by a fire wall & not located above or below another dwelling or another Class of building other than a private garage.

Class 1(b) - one or more buildings that constitute a boarding house, guest house, hostel of small scale (i.e.: not exceeding 12 persons or 300m² in floor area).

Class 2 - a building containing 2 or more dwelling units (e.g.: flats, apartments).

Class 3 - a residential building for a number of persons such as a large scale boarding house, guest house, hostel, the residential part of a hotel, motel, school, etc.

Class 4 - a dwelling unit that is a part of a commercial use (e.g.: a caretakers/managers flat).



Class 5 - an office building.

Class 6 - a shop or other building where goods or services are retailed directly to the public.

Class 7(a) - a car park building.

Class 7(b) - a storage building or building where goods are wholesaled (e.g.: a warehouse).

Class 8 - a laboratory or a building where a process takes place (e.g.: factory, workshop, etc.).

Class 9(a) - a health care building (e.g.: a hospital, clinic, etc.).

Class 9(b) - an assembly building (e.g.: community hall, sports hall, etc.)

Class 9(c) - an aged care building.

Class 10(a) - a non-habitable building being a private garage, shed, or the like.

Class 10(b) - a structure (e.g.: a fence, wall, mast, swimming pool, etc.).

Appendix A: Examples of powder coatings that are failing in the field. This job coated by another coater less than eighteen months after installation.





Appendix B: Examples of powder coating that has failed in the field after less than 6 months. Coated by another coater who does not have proper, nor Qualicoat Standard Pre-treatment for Aluminium.





NOTE

Details contained herewith do not constitute specific advice, merely they are provided as a matter of courtesy and as general information only. You should seek your specialist's advice, to ensure that any information or suggestion meet your specific requirements. Reference should be made to the respective standards for the finish concerned as well as Australian Aluminium Finishing Pty Ltd (AAF) Terms and Conditions of Sale. Latest releases of Australian Standards are available for purchase via the following website; www.standards.com.au

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For more information on anodising
and powder coating please visit:

aafonline.com.au

NSW Wetherill Park
VIC Dandenong
QLD Geebung

02 8787 3999
03 9215 5700
07 3637 5600
