COATING SPECIFICATION

THERMOSTATICALLY APPLIED POLYESTER POWDER COATING FOR ALUMINIUM SHEET METAL CABINETS

COATING SPECIFICATION: G1 ISSUE: 2 DATE: 7 AUGUST 2018

1.0 SCOPE

This document summarises the procedure for the application of thermostatically applied Polyester powder coatings.

Refer Design Standard, DS 95 (Standard for the Selection, Preparation, Application, Inspection and Testing of Protective Coatings on Water Corporation Assets) for additional information or clarification.

For more information, references shall be made to AS 3715-2002 (R2017) Metal Finishing - Thermoset powder coatings for architectural applications and AS 1627.6 – 2003 (2017) Metal Finishing - Preparation and Pretreatment of Surfaces.

2.0 PURPOSE

The most common polymers used are polyester, polyurethane, polyester-epoxy (known as hybrid). This coating is used on Aluminium sheet metal cabinets, intended for exterior service for the atmosphere categories C1 - C5 as described in AS 2312.1:2014

3.0 DEFINITIONS

ACA means Australasian Corrosion Association.

Contractor means the service provider or its sub-contractor who will undertake the works.

Corporation means the Water Corporation and the Principal for the purposes of externally contracted asset delivery.

DFT means Dry Film Thickness.

ITP means the detailed Inspection and Test Plan(s) for the Works.

NACE means National Association of Corrosion Engineers.

Superintendent means the Superintendent for the contract, as defined in the conditions of contract, who is appointed by the Corporation to manage/oversee the work under the contract on behalf of the Corporation.

TDFT means Total Dry Film Thickness.

Works means the surface preparation, coating application and inspection to be undertaken by the contractor to which this coating specification applies.
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4.0 GENERAL INFORMATION

4.1 All manufactured Aluminium products should have all fabrication work complete prior to pre-treatment ie; holes, slots, brackets and accessories should be in place, as additional works to the product after the treatment, will compromise its corrosion protection performance.

4.2 All external surfaces of the cabinet body shall be coated terminating under the door sealing strip. The external surface of the door shall be coated and continued onto the internal surface of the door return to terminate inside the door sealing strip.

5.0 SURFACE PREPARATION

5.1 All surface preparation shall be to AS 3715-2002 (R2017).

5.2 Minimum 4 stage submerged treatment using chemical Metal Etching and Chromate solution.

5.3 The mill finished Aluminium is submerged in a tank which contains chemical Metal Etching solution for approximately 5-6 mins.

5.4 It is then to be submerged in a clean water rinse tank and spray rinsed also.

5.5 It is then to be submerged in a tank which contains chromate solution for approximately 5-6 mins.

5.6 It is then to be rinsed in another clean water rinse tank and again spray rinsed.

5.7 It is also recommended that the surfaces of aluminium sheet metal to be coated shall be prepared in accordance with the paint manufacturer’s best recommended practice.

5.8 Coating shall not be applied to surfaces which have become contaminated or have deteriorated after preparation.

6.0 COATING MATERIALS

6.1 The specified coating shall be DULUX “Armour Spray Gloss White AG” ref#91019143.

6.2 Coating specifications inclusive of datasheets, coating application, method statements and ITP’s shall be submitted to the Principal for approval at least 10 working days prior to commencement of the work.
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6.3 Application and curing of powder coatings shall be carried out in accordance with the manufacturer's recommended practice for the on-site conditions.

7.0 COATING THICKNESS

7.1 Apply the specified powder coating using manual or automatic electrostatic spray equipment to attain 80 microns minimum dry film thickness on all surfaces in contact with the atmosphere.

7.2 The minimum total dry film thickness shall be 80 microns on all specified surfaces.

8.0 COATING FINISH

8.1 The finished coating shall be of uniform thickness, colour, appearance and gloss. It shall be fully cured, insoluble, adherent, coherent and free from holidays, laps, sags, blistering, checking, wrinkling, overspray, patchiness and any other defects that may impair the performance and/or appearance of the coating.

9.0 COATING APPLICATOR/PERSONNEL QUALIFICATION

9.1 Work shall only be carried out by a competent person.

9.2 The Applicator’s Coating Supervisor and or Inspector shall possess as a minimum one of the following certifications:

- ACA - Coating Inspector; or
- NACE - CIP Level I Coating Inspector.

9.3 The coating contractor shall nominate a Coating Inspector as their Quality Control officer to carry out inspections, submit the ITP, undertake the required testing and maintain appropriate records for all work performed.

10.0 INSPECTION AND TESTING OF COATING

10.1 Coatings shall be visually examined for surface defects and any discontinuity arising after curing shall be recorded.

10.2 Finished coating thickness shall be determined using suitable instruments standardised (zeroed) on a smooth uncoated non-ferrous plate in accordance with AS 3894.3-2002 (R2013).

11.0 REPAIR OF A DEFECTIVE COATING AND RETESTING
11.1 Coatings with defective areas equal to 20% or more of the total coated surface will be rejected outright.

11.2 Defects such as pinholes, cracks, blisters, voids, foreign inclusions and irregular profile peaks shall be marked for repair and retested upon full cure of the repaired coating.

12.0 RECORDING AND REPORTING

12.1 Following testing a report shall be submitted by the Contractor. The Contractor shall keep detailed records and reports including the following:

- Surface preparation;
- Coating application;
- Coating testing; and
- General failure.

12.2 Record batch numbers of all products used.

13.0 CONTRACTOR'S RESPONSIBILITY

13.1 The Contractor shall supply all necessary plant, equipment, materials and labour, prepare the surface and apply and maintain the protective coating in accordance with this specification.

13.2 The preceding inspection clauses shall not relieve the Contractor of their responsibility to supply materials and perform work in accordance with the requirements of any overriding contract documentation.

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