

COATING SPECIFICATION

EPOXY MASTIC, POLYURETHANE TOP COAT ON GALVANISED STEEL

COATING SPECIFICATION: E4

ISSUE: 4

DATE: OCTOBER 2022

1.0 SCOPE

This document summarises the procedure for the application of 2-pack Epoxy Mastic followed by Polyurethane top coat on Hot dip galvanised steel structures.

Refer to Design Standard, DS95 (Standard for the Selection, Preparation, Application, Inspection and Testing of Protective Coatings on Water Corporation Assets) for additional information or clarification.

It shall be read in conjunction with Water Corporation surface preparation specification **A3 - Surface Preparation for the application of Protective Coatings on Galvanized Steel**.

Note:

If anti-graffiti properties are required, replace the specified top coat with 2 coats of 50 microns nominal dry film thickness “Anti-graffiti Polyurethane” with a total thickness of 100 microns as described in Coating Specification J1.

2.0 PURPOSE

This coating is used on the external surfaces of Galvanised steel exposed to atmospheric corrosivity categories C1 to C5 as described in AS 2312

3.0 DEFINITIONS

ACA: Australasian Corrosion Association.

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

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

DFT: Dry Film Thickness.

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

NACE: National Association of Corrosion Engineers.

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

Works: 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 SURFACE PREPARATION

- 4.1 Sweep Blast the surface in accordance with Corporation surface preparation specification A3 and in accordance with AS2312.2 Clause 7.5.3.2. Where sweep blasting is not practicable, hand/power tool cleaning of HDG steel is acceptable by firstly removing any contaminants in accordance with AS1627.1.
- 4.2 Galvanized Steel work not required to be coated shall be protected with masking materials which shall be completely removed by the Contractor after completion of the work.

5.0 COATING MATERIALS

- 5.1 Coating materials used for attaining the specified standard shall be selected in accordance with Appendix 3 of DS-95- commonly used coatings in potable water and wastewater infrastructures unless approved otherwise by the Team Leader – Asset Durability. This approval is required before coating commences.
- 5.2 The coating components shall be thoroughly mixed in the specified proportions. Material so prepared shall be used within the “pot-life” period claimed by the manufacturer for the relevant site conditions.
- 5.3 Coating specifications inclusive of list of items, 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 work.
- 5.4 Surfaces to be coated which will become inaccessible after assembly or erection shall be cleaned and painted before they become inaccessible.
- 5.5 Welds, edges, crevices, seams, joints and corners shall be brush coated before commencement of spray application of the coating.
- 5.6 Recommended drying times between coats shall not be exceeded.
- 5.7 Applied coatings shall be protected from rain or moisture until cured.

6.0 ATMOSPHERIC CONDITIONS

- 6.1 Prior to and during coating application, the contractor shall record details pertaining to environmental conditions including ambient and surface temperature, relative humidity and dew point.

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6.2 Coating application shall not commence if any one of the following conditions exists:

- The relative humidity is above 85%;
- The substrate temperature is less than dew point plus 3°C;
- The substrate temperature is below 10°C;
- The substrate temperature is above 55°C;
- The surface to be coated is wet or damp;
- Where the full prime coat application cannot be carried out before the specified cleanliness of the surface deteriorates;
- If the weather is deteriorating or is unfavorable for application or curing;
- If the pot life of the paint has been exceeded.

7.0 COATING THICKNESS

7.1 Coating thickness of a nominal dry film thickness shall be determined based on atmospheric corrosivity categories as outlined in AS2312.2.

- C1 -C2: one coat 125 microns of 2 pack Epoxy Mastic coating followed by a minimum dry film thickness of 50 microns of Polyurethane top coat with a total thickness of 175 microns.
- C3-C5: two coats 125 microns per coat of 2 pack Epoxy Mastic coating followed by a minimum dry film thickness of 50 microns of Polyurethane top coat with a total thickness of 300 microns.

7.2 Finished coating thickness shall be determined using suitable instruments standardised (zeroed) on a smooth uncoated metal plate in accordance with Australian Standard AS 3894.3. Completed coating work will be subject to acceptance by the Superintendent.

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.

8.2 Protective coating colours shall comply with Australian Standard AS 2700 - Colour Standards for General Purposes. If a suitable approved colour is not available, then the proposed colour shall be referred to the Water Corporation for acceptance prior to use. Reference shall be made to Water Corporation Colour Code Drawing No. EG71-1-1, REV E for details of colours to be used for different applications.

9.0 COATING APPLICATOR/PERSONNEL QUALIFICATION

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- 9.1 Work shall only be carried out by a competent person.
- 9.2 The work shall be undertaken by an approved Water Corporation Corrosion Control Panel Services member, unless approved otherwise by the Team Leader – Asset Durability.
- 9.3 The coatings contractor shall nominate a certified coating inspector to perform inspections and maintain appropriate records for the work performed. Coating Inspector engaged in testing, monitoring and verification of surface preparation and coating application shall hold relevant inspection qualifications and current certifications (e.g. NACE or ACA).

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.

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:
- Environmental conditions (relative humidity, dew point etc.);
 - Surface preparation;
 - Surface profile;
 - Coating application;
 - Coating testing; and
 - General failure.
- 12.2 To supplement these records, prior to any works commencing, an Inspection Test Plan (ITP) shall be forwarded to the Water Corporation for review a minimum of ten working days prior to the commencement of work.

13.0 CONTRACTOR'S RESPONSIBILITY

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- 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.

Document Revision History					
Sect.	Issue	Date	Revision Description	RVWD.	APRV.
4	4	19/10/22	Amend surface preparation. Clause 4.1	JF/MS	SS
7	4	19/10/22	Amend coating thickness. Clause 7.1	JF/MS	SS
9	4	19/10/22	Amend coating thickness. Clause 9.3	JF/MS	SS

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