

Master Specification

Part ST-SS-S3

Galvanizing

September 2024



Government of South Australia
Department for Infrastructure
and Transport

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Document Information

Document Information	
K Net Number:	13434779
Document Version:	1
Document Date:	30/09/2024

Document Amendment Record

Version	Change Description	Date
0	Initial issue	31/08/2023
1	Updated cover page	30/09/2024

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ST-SS-S3 Galvanizing

1 General

- a) This Master Specification Part specifies the requirements for the hot-dip galvanizing of steel work, including:
 - i) the documentation requirements, as set out in section 2;
 - ii) the program of work and notification requirements, as set out in section 3;
 - iii) the design requirements, as set out in section 4;
 - iv) the pre-galvanising inspection requirements, as set out in section 5;
 - v) the post-galvanising inspection requirements, as set out in section 6;
 - vi) the requirements for the repair of damaged or uncoated areas, as set out in section 7;
 - vii) the Witness Point requirements, as set out in section 8; and
 - viii) the verification requirements and records, as set out in section 9.
- b) The hot-dip galvanizing of steel work must comply with the Reference Documents, including:
 - i) APAS Specification AP-2916 Organic Zinc-Rich Primer for the Long-term Protection of Steel (available from: <https://vs.csiro.au/apas/specifications/>); and
 - ii) AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles.

2 Documentation

2.1 Construction Documentation

In addition to the requirements of PC-CN3 “Construction Management”, the Construction Documentation must include the following documents, procedures and instructions for the hot-dip galvanizing of steel work:

- a) inspection for the presence of Defects in steel prior to galvanizing;
- b) method of galvanizing;
- c) inspection for appearance and the presence of Defects after galvanizing;
- d) verification of coating mass and thickness;
- e) repair of damaged or uncoated areas;
- f) Inspection and Test Plan to verify the requirements of this Master Specification Part; and
- g) details of any venting or draining necessary to comply with AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles, included as part of the Shop Drawings, in accordance with section 4.

2.2 Quality Management Records

In addition to the requirements of PC-QA1 “Quality Management Requirements” or PC-QA2 “Quality Management Requirements for Major Projects” (as applicable), the Quality Management Records must include the verification records required by Table ST-SS-S3 9-1.

3 Program of work and notification

- a) The Contract Program must clearly show the anticipated dates for cleaning, galvanizing, inspecting, and transporting each article to be galvanized and allow sufficient time for an external inspection pre-galvanizing and post galvanizing (prior to transportation).
- b) The Contractor must provide 48 hours' notice prior to each of the activities referred to in section 3a) commencing. Each notification will constitute a **Witness Point**. The Contractor must not commence the relevant activity until the Contractor has progressed past the Witness Point.

4 Design requirements

The design must be in accordance with AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles. The Contractor must submit details of any venting or draining necessary to comply with AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles, as part of the Shop Drawings.

5 Pre-galvanizing inspection

After fabrication and before galvanizing:

- a) welds must be inspected for the presence of pinholes, perforation or any other Defect which may impact on the effectiveness of the galvanizing process;
- b) any Defects must be repaired;
- c) all sharp edges must be removed by grinding to a minimum radius of 2 mm; and
- d) pre-galvanizing inspection records must be provided as part of the as part of the Quality Management Records.

6 Post-galvanizing inspection

- a) The Contractor must undertake and document an inspection of each galvanized article to verify that the requirements of AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles, have been met. In addition to the requirements of AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles, there must be no individual areas of greater than 5 cm² left uncoated after the galvanizing process, and the total uncoated area for the article must not exceed 0.1%.
- b) The records of the post-galvanizing inspection required in section 6a) must be provided as part of the as part of the Quality Management Records.
- c) Testing as described in AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles, must be carried out on each article. If the article is to be coated after galvanizing, adherence must be sufficient to allow sweep or brush blast cleaning, as described in AS/NZS 4680 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles, without flaking or peeling.
- d) Records of the coating after galvanizing required in section 6c) must be provided as part of the Quality Management Records.

7 Repair of damaged or uncoated areas

- a) Any defective areas or areas which remain uncoated must be:
 - i) treated as a Non-Conformance and the associated Hold Point set out in PC-QA1 "Quality Management Requirements" or PC-QA2 "Quality Management Requirements for Major Projects" (as applicable) will apply; and

- ii) repaired by the application of 2 coats of organic zinc rich primer, as approved under APAS Specification AP-2916 Organic Zinc-Rich Primer for the Long-term Protection of Steel, to a minimum total dry film thickness of 100 μm .
- b) Records of the repair of damaged or uncoated areas, required in section 7a)i), must be provided as part of the Quality Management Records.

8 Witness Points

Table ST-SS-S3 8-1 details the review period or notification period, and type (documentation or construction quality) for each Witness Point referred to in this Master Specification Part.

Table ST-SS-S3 8-1 Witness Points

Section reference	Witness Point	Documentation or construction quality	Review period or notification period
3b)	Notification prior to each galvanizing activity occurring	Construction quality	48 hours notification

9 Verification requirements and records

The Contractor must supply written verification as part of the Quality Management Records that the requirements listed in Table ST-SS-S3 9-1 have been complied with.

Table ST-SS-S3 9-1 Verification records

Section reference	Record to be provided
5	Pre-galvanizing inspection records
6b)	Post-galvanizing Defects and adherence inspection records
6d)	Coating mass and thickness records
7b)	Record of repair of damaged or uncoated areas