

# Structures

## Master Specification

### ST-BF-C4 Bridgework Sundries

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## ST-BF-C4 Bridgework Sundries

### 1 Traffic and Pedestrian Barriers

#### General

- 1.1 This Clause specifies the requirements for the fabrication and erection of steel barrier components and extruded aluminium alloy railings.

#### Design Standards

- 1.2 Unless specified otherwise, all design and / or documentation must comply with the most recent revisions (including published amendments) of the following design standards and / or specifications:
- a) AS 1553 Covered Electrodes for Manual Welding, Part 1 and 2.
  - b) AS 1554.1 Welding of Steel Structures.
  - c) AS 2205 Methods of Destructive Testing of Welds in Metal.
  - d) AS 1956 Anodic Oxidation Coatings on Aluminium for Decorative and Automotive Applications.

#### Materials

- 1.3 Materials and parts used in fabrication of components shall comply with the requirements of the Australian Standards as shown on the Drawings.

#### Fabrication

- 1.4 Fabrication of steel barrier components shall be undertaken in accordance with ST-SS-S1 "Fabrication of Structural Steelwork" and the requirements of this Part. All welds shall be prequalified in accordance with Clause 4.3 of AS 1554.1 and subject to visual inspection of work in accordance with Clause 6.2 of AS 1554.1.
- 1.5 At least 7 days' notice shall be given of commencement of fabrication of the traffic and / or pedestrian barrier.
- 1.6 Provision of the notice and weld prequalification supporting information shall constitute a **Hold Point**.
- 1.7 Dimensions shown on the Drawings are specified at 20°C. Posts and splice connections in rails shall be jig fabricated; all post base plates shall be drilled using the same template. Post to base plate welds shall comply with the SP Category of AS 1554.1. All other welds shall comply with the GP Category of AS 1554.1. Welds shall be subject to approval.
- 1.8 Electrodes shall comply with and be classified in accordance with AS 1553. Welds shall be finished as smooth as practicable. Where the finish on an exposed weld is not as smooth as practicable, the weld shall be ground to a smooth shape.
- 1.9 Corners on exposed edges of steel plates shall be rounded to a radius of approximately 2 mm. All burrs on aluminium components shall be removed. Fabrication shall be completed and all welds cleaned before galvanizing.

#### Protective Treatment

- 1.10 The contractor shall provide at least 7 days prior notice of the application of protective treatment.
- 1.11 Provision of the notice shall constitute a **Hold Point**.
- 1.12 Steel components shall be galvanized in accordance with ST-SS-S4 "Galvanizing".
- 1.13 The protective treatment of aluminium components shall comply with the following:
- a) components shall be anodised after fabrication;

- b) the anodised film shall have a minimum thickness of 25 µm (AA 25) and shall provide the maximum hardness and scratch resistance;
  - c) the properties of the finish shall comply with AS 1956;
  - d) handrails, handrail spigots and end caps shall be medium bronze colour; and
  - e) crash rail components and handrail fixing clamps shall be a natural silver colour.
- 1.14 Six weeks before ordering aluminium extrusions, the Contractor shall supply at least two samples of each anodised aluminium extrusion. The colour of extrusions used in the works shall match the colour of the samples.
- 1.15 Provision of the samples shall constitute a **Hold Point**.

## Transportation, Handling and Storage

- 1.16 Components shall be packed, supported, transported, handled and stored so that the components are kept clean and free from damage to the material or finish.
- 1.17 Posts, rails and panels shall be stored under cover and above ground and shall be protected against damage. At least 7 days' notice shall be given prior to transport of the components to site.
- 1.18 Provision of the notice shall constitute a **Hold Point**.

## Erection

- 1.19 Anchor bolts and shear nuts shall be cast into the kerbs using rigid templates temporarily secured in position to kerb formwork. Posts and panels shall be erected as detailed on the Drawings; railing shall be erected true to grade of the structure.
- 1.20 Deviation from the correct alignment of the posts, rails and panels shall not exceed 3 mm. The Contractor shall allow for the final adjustments of gaps between rails after completion of erection.

## 2 Miscellaneous Concrete Work

- 2.1 Unless shown as non-structural concrete on the Drawings or specified by the Principal, miscellaneous concrete work (such as concrete drains, sumps and edge beams) shall be constructed as shown on the Drawings and in accordance with ST-SC-S7 "Supply of Concrete".

## 3 Bridge Light

- 3.1 Unless shown otherwise on the Drawings or specified by the Principal, the Contractor shall:
- a) supply lighting components in accordance with RD-EL-S1 "Supply of Lighting Components"; and
  - b) carry out electrical work for bridge lighting in accordance with the relevant clauses of RD-EL-C1 "Installation of Lighting for Roads and Public Spaces".

## 4 Plaque

- 4.1 The Contractor shall supply and fix plaque(s) at the location(s) shown on the Drawings. The plaques shall comply with the following:
- a) be cast from gunmetal (85% Cu, 5% Pb, 5% Sn, 5% Zn) and be bronze oxidised;
  - b) have a raised margin with bright finish 3 mm above the recessed surface;
  - c) the recessed surface shall have a dull bronze finish;
  - d) runners shall be ground off after casting;
  - e) read the year (in numerals) in which construction is to be completed; and

- f) have letters with a clean, regular, sharp edges and bright finish, raised 3 mm above the recessed surface of the plate and the width of the component strokes of each letter shall be 5 mm.
- 4.2 A copy of the style of legend proposed by the Contractor shall be submitted, full size, 4 weeks before manufacture commences.
- 4.3 Provision of the copy of the style of legend proposed shall constitute a **Hold Point**.

## 5 Hold Points

5.1 The following is a summary of Hold Points referenced in this Part:

Document Ref.	Hold Point	Response Time
1.6	Notification of commencement of fabrication and weld prequalification information	2 working days
1.11	Notification of application of protective treatment	2 working days
1.15	Provision of anodised aluminium extrusion samples	7 working days
1.18	Notification of transportation of the components to site	2 working days
4.3	Copy of the style of legend proposed for plaque	7 working days