

**05 50 00 – METAL FABRICATIONS**

**Part 1      General**

**1.1            MEASUREMENT FOR PAYMENT**

- .1      Steel pipe sliders will be paid for per unit supplied and installed including any required fasteners and backing plates.
- .2      Float to pipe slider connections will be paid for per unit supplied and installed including any required fasteners and backing plates.
- .3      Aluminum ramp to timber crib wharf connections will be paid for per unit supplied and installed including any required fasteners and backing plates.

**1.2            REFERENCES**

- .1      ASTM International
  - .1      ASTM A53/A53M-07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
  - .2      ASTM A307[07b, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .2      CSA International
  - .1      CSA G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2      CAN/CSA G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3      CSA S16-09, Design of Steel Structures.
  - .4      CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
  - .5      CSA W59-M03(R2008), Welded Steel Construction (Metal Arc Welding) Metric.

**1.3            ACTION AND INFORMATIONAL SUBMITTALS**

- .1      Shop Drawings:
  - .1      Submit drawings stamped and signed by professional engineer registered or licensed in the Province having jurisdiction.
  - .2      Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

**1.4            DELIVERY, STORAGE AND HANDLING**

- .1      Deliver, store and handle materials in accordance with Section with manufacturer's written instructions.
- .2      Storage and Handling Requirements:

- .1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .2 Replace defective or damaged materials with new.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Steel sections and plates: to CSA G40.20/G40.21, Grade 350W.
- .2 Welding materials: to CSA W59.
- .3 Welding electrodes: to CSA W48 Series.
- .4 Bolts and anchor bolts: to ASTM A307, galvanized where exposed to weather.

### **2.2 FABRICATION**

- .1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .2 Where possible, fit and shop assemble work, ready for erection.
- .3 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.

### **2.3 FINISHES**

- .1 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m<sup>2</sup> to CAN/CSA-G164.

### **2.4 SHOP PAINTING**

- .1 Primer: VOC limit 250 g/L maximum to GS-11 CCD-047a CCD-048.
- .2 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.
- .3 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7 degrees C.
- .4 Clean surfaces to be field welded; do not paint.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for metal fabrications installation in accordance with manufacturer's written instructions.

### **3.2 ERECTION**

- .1 Do welding work in accordance with CSA W59 unless specified otherwise.
- .2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
- .3 Provide suitable means of anchorage acceptable to Engineer such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.
- .4 Exposed fastening devices to be hot dipped galvanized and /or shall be compatible with material through which they pass.
- .5 Make field connections with bolts to CSA S16.
- .6 Touch-up field welds, bolts and burnt or scratched surfaces with primer;
  - .1 Primer: maximum VOC limit 250 g/L to GS-11.
- .7 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.
  - .1 Primer: maximum VOC limit 250 g/L to GS-11.

### **3.3 CLEANING**

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste off site at regular intervals for disposal.
- .3 Do not burn waste materials on site. Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 When Work is substantially completed, remove surplus products, tools, and equipment not required to complete remaining work.

### **3.4 PROTECTION**

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by metal fabrications installation.

**END OF SECTION**