

## **PART 1        GENERAL**

### **1.1            REFERENCES**

- .1 American Society for Testing and Materials International, (ASTM)
  - .1 ASTM A53/A53M-02, Specification for Pipe, Steel, Black and Hot Dipped, Zinc Coated, Welded and Seamless.
  - .2 ASTM A325, Specification for Carbon Steel Bolts and Studs.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-1.40-97, Anti-corrosive Structural Steel Alkyd Primer.
  - .2 CAN/CGSB-1.181-92, Ready Mixed, Organic Zinc Rich Coating.
- .3 Canadian Standards Association (CSA International)
  - .1 CAN/CSA-G40.20/G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel.
  - .2 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
  - .4 CSA W59-03, Welded Steel Construction (Metal Arc Welding).
- .4 The Environmental Choice Program
  - .1 CCD-047a-98, Paints, Surface Coatings.
  - .2 CCD-048-98, Surface Coatings - Recycled Water-borne.

### **1.2            SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings
  - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

### **1.3            QUALITY ASSURANCE**

- .1 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

### **1.4            DELIVERY, STORAGE, AND HANDLING**

- .1 Packing, Shipping, Handling and Unloading:

- .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.

## **1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Divert unused metal materials from landfill to metal recycling facility.

## **PART 2 PRODUCTS**

### **2.1 MATERIALS**

- .1 Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 300W.
- .2 Steel pipe: to ASTM A53/A53M standard weight, black finish.
- .3 Welding materials: to CSA W59.
- .4 Welding electrodes: to CSA W48 Series.
- .5 Bolts and anchor bolts: to ASTM A325.

### **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 600g/m2 to CAN/CSA-G164.
- .2 Shop coat primer: to CAN/CGSB-1.40.
- .3 Zinc primer: zinc rich, ready mix to CAN/CGSB-1.181.

### **2.4 ISOLATION COATING**

- .1 Isolate aluminum from following components, by means of bituminous paint:
  - .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
  - .2 Concrete, mortar and masonry.
  - .3 Wood.

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**2.5 SHOP PAINTING**

- .1 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.
- .2 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.
- .3 Clean surfaces to be field welded; do not paint.

**PART 3 EXECUTION**

**3.1 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 Departmental Representative such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.
- .4 Exposed fastening devices to match finish and be compatible with material through which they pass.
- .5 Provide components for building by other sections in accordance with shop drawings and schedule.
- .6 Make field connections with bolts to CAN/CSA-S16.1, or weld.
- .7 Hand items over for casting into concrete to appropriate trades together with setting templates.
- .8 Touch-up rivets, field welds, bolts and burnt or scratched surfaces with primer after completion of erection.
- .9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

**3.2 CLEANING**

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

**END OF SECTION**