

**Part 1            General**

**1.1               RELATED SECTIONS**

- .1        Section 01 33 00 - Submittal Procedures.
- .2        Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

**1.2               REFERENCES**

- .1        Canadian Standards Association (CSA International)
  - .1        CAN/CSA-G40.20/G40.21, General Requirements for Rolled or Welded Structural Quality Steel.
  - .2        CSA W48, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
  - .3        CSA W59, Welded Steel Construction (Metal Arc Welding) (Imperial Version).
  - .4        Bolts: ASTM A307-89
  - .5        Submarine welds: ANSI/AWS D3.6

**1.3               SUBMITTALS**

- .1        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.
  - .3        Provide written description of welding procedure for Engineer approval two (2) weeks before the beginning of work, when requested by said Engineer.
  - .4        Each shop drawing must be signed and sealed by an engineer, member of the Ordre des Ingénieurs du Québec.

**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        Divert unused metal materials from landfill to metal recycling facility approved by Departmental Representative.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 350W.
- .2 Welding materials: to CSA W59
- .3 Welding electrodes: to CSA W48 Series and AWS D 3.6
- .4 Bolts and anchoring bolts: ASTM A307 or ASTM A325, type 1, except when otherwise specified.
- .5 Nuts and washers: according to the requested bolt, so as to get its full capacity. Nuts will be lubricated according to standard A563.

### **2.2 WELDS**

- .1 All welds except the submarine welds, should comply with standard CAN/CSA W59.
- .2 Submarine welds should comply with standard ANSI/AWS D3.65. Welds must be of type B.
- .3 Before welding work, obtain the authorization of the wharf's keeper.

### **2.3 METAL FABRICATION - GENERAL**

- .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.

## **Part 3 Execution**

### **3.1 ERECTION**

- .1 Do welding work in accordance with CSA W59 and AWS D 3.6 unless specified otherwise.
- .2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

### **3.2 CONTROL AND INSPECTION**

- .1 Provide written description of welding procedure for approval by the Departmental Representative four (4) weeks before the beginning of the work.

- .2 The Departmental Representative can proceed any time with non-destructive testing of the welds made on the working-site. The costs of these tests will be paid for by the Department.
- .3 Contractor will give access and facilitate the welds examination by the Departmental Representative at no extra cost for the Department.
- .4 If the welds examination reveals any defect, it should be repaired and re-inspected by the Departmental Representative. The Contractor will have to change his welding procedure so as to eliminate all failures noted. The repairs and the second inspection will be paid for by the Contractor.
- .5 Allow the Departmental Representative to proceed with inspection either at the fabrication, erection and/or assembly plant.
- .6 Report to Departmental Representative any failure in the material or any assembly problem on the working-site. In the occurrence of any repairs, they should be made at the Departmental Representative utmost satisfaction.
- .7 The submarine welders will be qualified by the Departmental Representative. The cost of the corrosion samples and testing will be paid for by the Contractor. The welders that will not be qualified will not be authorized to proceed.

**END OF SECTION**