

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 03 30 00 - Cast-in-Place Concrete.

1.2 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 A269-02, Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - .3 ASTM A307-02, Specification for Carbon Steel Bolts and Studs, 414 MPa Tensile Strength.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.40-97, Anti-corrosive Structural Steel Alkyd Primer.
 - .2 CAN/CGSB-1.181-99, Ready-Mixed, Organic Zinc-Rich Coating.
- .3 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel.
 - .2 CAN/CSA-G164-M92(R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CAN/CSA-S16.1-01, Limit States Design of Steel Structures.
 - .4 CSA W48-01, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
 - .5 CSA W59-1989(R2001), Welded Steel Construction (Metal Arc Welding) (Imperial Version).

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheets in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Indicate VOC's for finishes, coatings, primers and paints.

- .2 Shop Drawings
 - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

1.4 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.
- .3 Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with local regulations.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal packaging material for recycling in accordance with Waste Management Plan.
- .4 Wherever possible, 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 300W.
- .2 Steel pipe: to ASTM A53/A53M.
- .3 Welding materials: to CSA W59.
- .4 Welding electrodes: to CSA W48, electrode to match steel grade and metallurgy.
- .5 Bolts and anchor bolts: to ASTM A307 unless noted otherwise.
- .6 Aluminum plate: Alloy 5052 H32 temper (or approved equal).
- .7 Aluminum Tube: Alloy 6061 T6 temper, rounded corners (or approved equal).

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 All structural steel shall be shop painted, unless otherwise noted, as specified in Section 2.4.
- .2 All anchor bolts and fasteners shall be hot dipped galvanized.
- .3 Galvanizing: hot dipped galvanizing with zinc coating 600 g/m² to CAN/CSA-G164.
- .4 Shop coat primer: to CAN/CGSB-1.40.
- .5 Zinc primer: zinc rich, ready mix to CAN/CGSB-1.181.
- .6 Aluminum fabrications to self colour (no painting of aluminum).

2.4 SHOP PAINTING

- .1 Coatings shall be applied in accordance with the manufacturer's specifications. All blast cleaning and shop painting shall be carried out under cover in an area protected from weather and other detrimental effects.
- .2 All dry film thickness (DFT) shall be stated in Mils (thousands of an inch). The equivalent measurement and conversions are as follows:

One thousandth of an inch (1 mil) = 25 microns

The detailed requirements of the paint schedule are given below.

- .3 Stripe coats shall be applied to all welds, lap joints, plate edges, corners, sharp edges and any other areas where spray application of the overall coating system may result in low dry film thickness.

- .4 The following paint system shall be used:

Coat No.	Type	Binder	Product Name	Dry Film Thickness
1	Primer	Zinc-Rich Epoxy	Interzinc 52	2.5 mils
2	Mid Coat	Polyamide Epoxy	Interseal 670HS	7 mils
2	Stripe Coat	Polyamide Epoxy	Interseal 670HS	5 mils
3	Topcoat	Polyamide Epoxy	Interseal 670HS	7 mils
-	-	-	-	16.5 mils minimum

Note: Finished coating system Dry Film Thickness shall be a minimum of 16.5 Mil (412 microns) at each spot measurement. Stripe coat not included.

Topcoat to be a light grey colour (colour code RAL 7035) except for **railing which shall have a red top coat (RAL 3000) and curb which shall have a safety yellow top coat (RAL 1003).**

- .5 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.
- .6 Clean surfaces to be field welded; do not paint.

2.5 ISOLATION COATING

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

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 Exposed fastening devices to match finish and be compatible with material through which they pass.
- .4 Make field connections with bolts to CAN/CSA-S16.1, or weld.
- .5 Deliver items over for casting into concrete and building into masonry together with setting templates to appropriate location and construction personnel.

- .6 Touch-up galvanized surfaces and welds with zinc rich primer or marine-grade epoxy where burned by field welding.

3.2 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