

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 B209-14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
 - .3 ASTM B221-14, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
 - .4 ASTM A240/A240M-16, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
 - .5 ASTM A269-[02], Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - .6 ASTM A307-[02], Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
 - .7 ASTM B632/B632-M-15, Standard Specification for Aluminum-Alloy Rolled Tread Plate
- .2 American National Standards Institute:
 - .1 ANSI 14.3-2000, Safety Requirements for Fixed Ladders
- .3 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.
- .4 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).
- .5 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 Submit two copies of WHMIS MSDS - Material Safety Data Sheets. Indicate VOC's:

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- .1 For finishes, coatings, primers and paints.
 - .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.
 - .3 Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty 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.
 - .2 Storage and Protection:
 - .1 Cover exposed stainless steel surfaces with pressure sensitive heavy protection paper or apply strippable plastic coating, before shipping to job site.
 - .2 Leave protective covering in place until final cleaning of building. Provide instructions for removal of protective covering.
 - 1.5 WASTE MANAGEMENT AND DISPOSAL**
 - .1 Separate and recycle waste materials in accordance with Section 01 74 00 – Cleaning and Waste Management.
 - Part 2 Products**
 - 2.1 MATERIALS**
 - .1 Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 300 W.
 - .2 Steel pipe: to ASTM A53/A53M, standard weight, schedule 40 seamless black.
 - .3 Steel tubing: to CAN/CSA-G40.20/G40.21 Grade 300W, square, wall thickness, sizes and dimensions as indicated.
 - .4 Floor plate: to CAN/CSA-G40.20/G40.21, Grade 260 W, thickness as indicated.
 - .5 Welding materials: to CSA W59.
 - .6 Welding electrodes: to CSA W48 Series.
 - .7 Bolts and anchor bolts: to ASTM A307.

- .8 Aluminum sheet: plain, ¼" minimum thickness, powder coated finish, colour as indicated on drawings.
- .9 Aluminum finishing materials: 18 gauge unless noted otherwise, satin anodized, to ASTM B632 and ASTM B209.
- .10 Stainless steel finishing materials: 22 gauge unless noted otherwise, satin finish, ASTM A240.
- .11 Stainless steel tubing: to ASTM A269, Commercial grade.
- .12 Grout: non-shrink, non-metallic, flowable, 15 MPa at 24 hours.

2.2 FABRICATION

- .1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .2 Use self-tapping shake-proof flat headed screws on items requiring assembly by screws or as indicated.
- .3 Where possible, fit and shop assemble work, ready for erection.
- .4 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/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.

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.

2.6 SIGNAGE

- .1 Fabricate signage (both positive and negative) from Aluminum ¼" thick (gauge 3), dimensions as indicated.

- .2 Shop coat prime after fabrication and apply a high build epoxy coating finish to Section 09 91 13 –Exterior Painting.
- .3 Colour: Refer to drawings for paint colour.

Part 3 Execution

3.1 ERECTION

- .1 Do welding work in accordance with CSA W59 unless specified otherwise.
- .2 Erect metal work square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
- .3 Provide suitable means of anchorage acceptable to Contract Administrator 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 or building into masonry to appropriate trades together with setting templates.
- .8 Touch-up rivets, field welds, bolts and burnt or scratched surfaces after completion of erection with primer.
- .9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.
- .10 Touch-up high build epoxy coated finishes.

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