

Part 1 General

1.1 REFERENCES

- .1 ASTM International
 - .1 ASTM A53/A53M-12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM A269/A269M-14e1, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - .3 ASTM A307-14, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
 - .4 ASTM A480/A480M-16, Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
- .2 Canadian Standards Association (CSA)
 - .1 CSA G40.20-04/G40.21-04, 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 W48-14, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
 - .5 CSA W59-13, Welded Steel Construction (Metal Arc Welding) Metric.
- .3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

1.2 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for sections and plates; include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements.
- .3 Shop Drawings:
 - .1 Where required, submit drawings stamped and signed by professional engineer registered or licensed in Province of Saskatchewan.
 - .2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

- .4 Certifications: Submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.3 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store, and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 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 300W.
- .2 Steel pipe: To ASTM A53/A53M standard weight.
- .3 Welding materials: To CSA W59.
- .4 Welding electrodes: To CSA W48 Series.
- .5 Bolts and anchor bolts: To ASTM A307.
- .6 Stainless steel strip, sheet, and plate: Type 316, to ASTM A480/A480M.
- .7 Stainless steel tubing: To ASTM A269, Type 304, commercial grade seamless welded with No. 4 finish.
- .8 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 Accurately cut, machine, file and fit joints, corners, copes and mitres.
- .5 Where work of other Sections is to be attached to work of this Section, prepare work by drilling and tapping holes as required to facilitate installation of such work.
- .6 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.

2.4 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 GRAB BAR

- .1 Fabricate from 1.59 mm (16 gauge) thick stainless steel sheet, to shapes and profiles as indicated.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify conditions of substrates are acceptable for metal fabrications installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate.
 - .2 Inform Departmental Representative of unacceptable conditions.
 - .3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 ERECTION

- .1 Perform 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 Supply components for work by other trades in accordance with shop drawings and schedule.
- .6 Make field connections with bolts to CSA S16.
- .7 Deliver items for casting into concrete and building into masonry together with setting templates to appropriate location and construction personnel.

- .8 Touch-up rivets, field welds, bolts, and burnt or scratched surfaces with primer after completion of installation.
- .9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

3.3 GRAB BARS

- .1 Install grab bars in locations as indicated.

3.4 CLEANING

- .1 Progress Cleaning: Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Leave Work area clean at end of each day.
- .3 Final Cleaning: Upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .4 Waste Management: Remove waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.5 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