

PART 1 - GENERAL**1.1 RELATED REQUIREMENTS**

- .1 Section 01 74 19 – Waste Management and Disposal.
- .2 Section 08 80 50 – Glazing.

1.2 REFERENCE STANDARDS

- .1 ASTM International
 - .1 ASTM A 53/A 53M-12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM A 269M-15a, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - .3 ASTM A 307-14, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

1.3 ACTION AND INFORMATIONAL 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, plates, pipes, tubing and bolts, and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two copies of WHMIS MSDS
 - .1 For finishes, coatings, primers, and paints applied on site: indicate VOC concentration in g/L.
- .3 Shop Drawings :
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec, Canada and member of the OIQ.
 - .2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

1.4 WELDING COMPANY CERTIFICATION

- .1 Welding companies must be certified under section 2.1 of the CSA W47.1 standard when using the fusion welding method or CSA W55.3 standard when using the resistance welding method. Submit proof of certification from welding companies.

1.5 CALCULATION CRITERIA

- .1 The steps, levels, and railing of metal staircase and all anchoring accessories must be designed to withstand the vertical and horizontal loads, depending on the NBC requirements.
 - .2 The subcontractor must design structural details and elements indicated in the plans to reproduce drawing intent as indicated in drawings. Subcontractor must provide workshop drawings including seal and signature of an engineer, member of the OIQ, to validate the design details.
 - .3 Provide all ribs, welds, hidden screws and plate anchorages required, quantities and dimensions as needed for metal fabrication components as indicated in drawings.
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1.6 QUALITY ASSURANCE

- .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certifications: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Meeting prior to installation: hold a meeting in which work requirements, manufacturer installation instructions and guarantee terms will be examined.

1.7 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 Delivery and Acceptance Requirements: 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, indoors, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.
- .4 Waste Management and Disposal:
 - .1 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
 - .2 Package Waste Management: recover packaging waste for reuse and manufacturer reuse of packaging materials such as pallets, crates, boards and other packaging material, in accordance with Section 01 74 19 – WASTE MANAGEMENT AND DISPOSAL.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Steel sections and plates: to CSA G40.20/G40.21, Grade 350W.
 - .2 Welding materials: to CSA W59.
 - .3 Welding electrodes: to CSA W48 Series.
 - .4 Bolts and anchor bolts: to ASTM A 307.
 - .5 Aluminum sheet: proprietary utility sheet, general use smooth, 1.0 mm minimum thickness, pre-painted shop finish.
 - .6 Stainless steel: to A269, Type 304, exposed surfaces, brushed finish.
 - .7 Stainless steel tubing: to ASTM A 269, Type 304, commercial grade.
 - .8 Grout: non-shrink, non-metallic, flowable, 15 MPa at 24 hours.
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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 Exposed welds continuous for length of each joint. File or grind exposed welds smooth and flush.

2.3 FINISHES

- .1 Shop coat primer: MPI in accordance with chemical component limits and restrictions requirements and VOC limits.

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.

2.5 SHOP PAINTING

- .1 Primer: VOC limit 250 g/L maximum to GS-11.
- .2 Apply one shop coat of primer to metal items, with exception of galvanized or concrete encased items.
- .3 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Paint when temperature minimum 7 degrees C.
- .4 Powder coated :
 - .1 Allow (4) smooth finished colour and brilliance 17±3 units on 60, colour as selected by DCC Representative.
 - .2 Minimum Characteristics :

.1	Density	1,48 approx.
.2	Hardness (ASTM D3363)	H-2H
.3	Humidity (ASTM D2247)	No blisters
.4	Flexibility (ASTM D522)	3/16"
.5	Adhesion Test (ASTM D3359)	5B
 - .3 The entirety of the work will have to be cleaned, degreased and decontaminated with a cleaner in accordance with SSPC-SP1 and rinse well. Repeat the process as needed, until surface is sound and free from contaminants.
 - .4 All steel works will be subjected to a mechanical cleaning in accordance with SSPC-SP5: eliminate all visible traces of oil, grease, dirt, rolling crust, rust, paint, oxidation, corrosion and other foreign metal deposits. Obtain surface profile of 1 mil (25 µ).
- .5 Clean surfaces to be field welded; do not paint.

2.6 HANDRAILS AND BUMPERS

- .1 Stainless steel handrail, type 304, brushed finish, dimensions as indicated in drawings.
- .2 Stainless steel wall bumpers, type 304, brushed finish, dimensions as indicated in drawings.

2.7 CAB WALL FINISHES

- .1 Stainless steel sheet, type 304, vertically brushed finish, suitable gauge for application or as specified in division 14.

2.8 CAB CEILINGS

- .1 Aluminum sheet, smooth finish, to be shop painted, cut with polished edges (non-cutting), 1.0 mm thickness, glued on fire-rated particleboard.
- .2 Suspensions and mouldings as indicated in drawings.
- .3 Escape hatch, as indicated in division 14.

PART 3 - EXECUTION**3.1 ERECTION - GENERAL**

- .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 Supply components for work by other trades in accordance with shop drawings and schedule.
- .6 Make field connections as indicated in drawings.
- .7 Deliver items over 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.
- .9 Touch-up galvanized surfaces with zinc rich primer where burned by field welding.

3.2 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
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3.3 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
