

**Part 1 General**

**1.1 REFERENCES**

- .1 ASTM International Inc.
  - .1 ASTM A36/A36M-14, Standard Specification for Carbon Structural Steel.
  - .2 ASTM A307-14, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
  - .3 ASTM A325-14, Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
  - .4 ASTM A325M-14, Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength.
  - .5 ASTM A490M-14a, Standard Specification for High-Strength Steel Structural Bolts, Classes 10.9 and 10.9.3, for Structural Steel Joints.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-85.10-99, Protective Coatings for Metals.
- .3 Canadian Institute of Steel Construction (CISC)/Canadian Paint Manufacturers Association (CPMA).
  - .1 Handbook of the Canadian Institute of Steel Construction.
  - .2 CISC/CPMA Standard 2-75, Quick-Drying Primer for use on Structural Steel.
- .4 Canadian Standards Association (CSA International)
  - .1 CSA G40.20/G40.21-13, 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 CAN/CSA-S16-14, Limit States Design of Steel Structures.
  - .4 CSA W47.1-03 (R2014), Certification of Companies for Fusion Welding of Steel.
  - .5 CSA W48-14, Filler Metals and Allied Materials for Metal Arc Welding.
  - .6 CSA W55.3-08(R2013)], Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings.
  - .7 CSA W59-13, Welded Steel Construction (Metal Arc Welding).
- .5 Master Painters Institute
  - .1 MPI-INT 5.1-08, Structural Steel and Metal Fabrications.
- .6 The Society for Protective Coatings (SSPC) and National Association of Corrosion Engineers (NACE) International
  - .1 NACE No. 3/SSPC SP-6-06, Commercial Blast Cleaning.

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
  - .1 Provide drawings stamped and signed by professional engineer registered or licensed in the Province of Manitoba, Canada.

- .3 Fabrication drawings:
  - .1 Submit fabrication drawings showing designed assemblies, components and connections are stamped and signed by qualified professional engineer licensed in the Province of Manitoba, Canada.

### **1.3 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with manufacturer's instructions.
- .2 Deliver materials in manufacturer's original, undamaged containers with identification labels intact.

## **Part 2 Products**

### **2.1 DESIGN REQUIREMENTS**

- .1 Design details and connections in accordance with requirements of CAN/CSA-S16 to resist forces, moments, shears and allow for movements indicated.
- .2 Shear connections:
  - .1 Select framed beam shear connections from an industry accepted publication such as "Handbook of the Canadian Institute of Steel Construction" when connection for shear only (standard connection) is required.
  - .2 Select or design connections to support reaction from maximum uniformly distributed load that can be safely supported by beam in bending, provided no point loads act on beam, when shears are not indicated.

### **2.2 MATERIALS**

- .1 Structural steel: to CSA-G40.20/G40.21 Grade as indicated on drawing.
- .2 Anchor bolts: to CSA-G40.20/G40.21, Grade as indicated on drawing.
- .3 Bolts, nuts and washers: to ASTM A307, ASTM A325, ASTM A325M, ASTM A490/A490M as indicated on drawing.
- .4 Welding materials: to CSA W48 Series and CSA W59 and certified by Canadian Welding Bureau.
- .5 Shop paint primer: to CISC/CPMA2-75 solvent reducible alkyd, grey.
- .6 Hot dip galvanizing: galvanize steel, where indicated, to CAN/CSA-G164, minimum zinc coating of [600] g/m<sup>2</sup>.

### **2.3 FABRICATION**

- .1 Fabricate structural steel in accordance with CAN/CSA-S16 and in accordance with approved shop drawings.

### **2.4 SHOP PAINTING**

- .1 Clean, prepare surfaces and shop prime structural steel in accordance with [CAN/CSA-S16].
  - .2 Clean members, remove loose mill scale, rust, oil, dirt and foreign matter. Prepare surface according to NACE No.3/SSPC-SP-6.
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- .3 Apply the following coating:
  - One prime coat Interzinc 52 zinc-rich epoxy (2.5 mil dft)
  - One finish coat Intergard 345 high-build epoxy (6 mil dft)
- .4 Apply paint under cover, on dry surfaces when surface and air temperatures are above 5 degrees C.
- .5 Maintain dry condition and 5 degrees C minimum temperature until paint is thoroughly dry.
- .6 Strip paint from bolts, nuts, sharp edges and corners before prime coat is dry.

**Part 3 Execution**

**3.1 APPLICATION**

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

**3.2 GENERAL**

- .1 Structural steel work: in accordance with CAN/CSA-S16.
- .2 Welding: in accordance with CSA W59.
- .3 Companies to be certified under Division 1 or 2.1 of CSA W47.1 for fusion welding of steel structures and/or CSA W55.3 for resistance welding of structural components.

**3.3 CONNECTION TO EXISTING WORK**

- .1 Verify dimensions and condition of existing work, report discrepancies and potential problem areas to Contract Administrator for direction before commencing fabrication.

**3.4 ERECTION**

- .1 Erect structural steel, as indicated and in accordance with CAN/CSA-S16 and in accordance with structural drawings.
- .2 Field cutting or altering structural members: to approval of Contract Administrator.
- .3 Clean with mechanical brush and touch up shop primer to bolts, rivets, welds and burned or scratched surfaces at completion of erection.
- .4 Continuously seal members by continuous welds where indicated. Grind smooth.

**3.5 FIELD PAINTING**

- .1 Field touch-up to match existing coating.

**3.6 CLEANING**

- .1 Clean in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

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