

SECTION 05120 - STRUCTURAL METAL FRAMING

PART I - GENERAL

1.01 DESCRIPTION

- A. The work includes but is not limited to structural steel, steel studs, and miscellaneous fabrications.
- B. Comply with AISC "Code of Standard Practice for Steel Buildings and Bridges", latest edition. AWS D1.1 "Structural Welding Code".
- C. Comply with requirements of architect of record.
- D. Field alterations of structural steel are not allowed without written approval of the Engineer of Record.
- E. Miscellaneous Fabrications include but are not limited to railings, ladders, elevator hoisting beams (if applicable) and roof opening frames.

1.02 QUALITY ASSURANCE

- A. Comply with AISC "Code of Standard Practice for Steel Buildings and Bridges", latest edition. AWS D1.1 "Structural Welding Code".
- B. Comply with AISI "Specification for the Design of Cold-Formed Structural Members".
- C. Comply with requirements of architect of record.
- D. Field alterations of structural steel are not allowed without written approval of the Engineer of Record.
- E. Field Quality Control
 - 1. An independent testing agency will perform field quality control tests.
 - 2. High-Strength Bolts: Provide testing and verification of field-bolted connections in accordance with AISC S329, testing at least 25 percent of bolts at each connection.
 - 3. Welded Connections: Visually inspect all field-welded connections and test at least 25 percent of welds using one of the following:
 - a. Radiographic testing per ASTM E 94 and ASTM E 142.
 - b. Ultrasonic testing per ASTM E 164.
 - c. Liquid penetrant inspection per ASTM E 165.
- F. Quality Control Testing; A certified AWS Weld Inspector shall inspect 100% of welded moment connections and 10% of all other welded connections. Manually torque test 10% of all bolted connections to verify correct tightness.

1.03 SUBMITTALS

- A. Submit shop drawings to architect of record.

PART II - PRODUCTS

2.01 MATERIALS

- A. Structural Steel Shapes, Plates, Bars; ASTM A36, ASTM A992.
- B. Steel Pipe; ASTM A 501.
- C. Steel Tubing; Cold-Formed ASTM A 500, grade B; hot-formed ASTM A 501.
- D. Anchor bolts and fasteners, ASTM A 325 as required by architect of record. ASTM A 307 anchor bolts are acceptable in non-tension applications.
- F. Primer; Fabricators standard rust inhibiting primer.
- G. Steel studs and C joists, ASTM A653 structural quality, grade 33.
- H. All steel exposed to weather shall be hot dipped galvanized.
- H. Grout: Non-shrink, non-metallic aggregate type, with ASTM C 1107 and capable of developing a minimum compressive strength of 5,000 psi at 28 days (ASTM C 109), shall show no shrinkage (0.0%), maximum 4.0% expansion from time of placement until final set (ASTM C827) and .2% expansion in the hardened state (CRD C-621). Five Star Grout by US Grout Corp. or equal.

PART III - EXECUTION

3.01 ERECTION

- A. Set frames accurately to lines and elevations indicated. Level and plumb individual members within AISC tolerances. Comply with AISC specifications for bearing, alignment and welds.
- B. Touch-up paint all exposed and/or abraded areas after erection.
- C. Welds of all metal fabrications shall be ground smooth and prepared for final painting.
- D. All structural steel encased in concrete, masonry or in contact with earth shall be painted with bituminous paint.
- E. Hoisting beams for elevators shall be furnished and installed by General Contractor.

END OF SECTION