

**SECTION 05120 - STRUCTURAL STEEL****PART 1 - GENERAL****1.1 SECTION REQUIREMENTS**

- A. Submittals: Product Data and Shop Drawings.
- B. Comply with AISC's "Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design," RCSC's "Specification for Structural Joints Using ASTM A 325" and AWS D1.1/D1.1M, "Structural Welding Code - Steel."

**PART 2 - PRODUCTS****2.1 STRUCTURAL STEEL**

- A. W-Shapes: ASTM A 992/A 992M.
- B. Channels, Angles: ASTM A 36.
- C. Plate and Bar: ASTM A 36.
- D. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.
- E. Steel Pipe: ASTM A 500, Grade B, standard weight (Schedule 40) unless otherwise indicated.

**2.2 ACCESSORIES**

- A. High-Strength Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy hex steel structural bolts; ASTM A 563 (ASTM A 563M) heavy hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M) hardened carbon-steel washers.
- B. Anchor Rods: ASTM F 1554, Grade 36.
  - 1. Nuts: ASTM A 563 (ASTM A 563M) hex carbon steel.
  - 2. Plate Washers: ASTM A 36/A 36M carbon steel.
  - 3. Washers: ASTM F 436 (ASTM F 436M) hardened carbon steel.
- C. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer..
- D. Grout: ASTM C 1107, nonmetallic, shrinkage resistant, factory packaged.

**2.3 FABRICATION**

- A. Fabricate and assemble structural steel in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and its "Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design."

- B. Shop Priming: Prepare surfaces according to SSPC-SP 2, "Hand Tool Cleaning" or SSPC-SP 3, "Power Tool Cleaning." Shop prime steel to a dry film thickness of at least 1.5 mils (0.038 mm). Do not prime surfaces to be embedded in concrete or mortar or to be field welded.

### PART 3 - EXECUTION

#### 3.1 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and its "Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design."
- B. Base and Bearing Plates: Clean bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
1. Set base and bearing plates for structural members on wedges, shims, or setting nuts.
  2. Weld plate washers to top of base plate.
  3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Cut off protruding wedges or shims flush with edge of plate before packing with grout.
  4. Promptly pack grout solidly between bearing surfaces so no voids remain. Neatly finish exposed surfaces; protect grout and allow it to cure.
- C. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
- D. Do not use thermal cutting during erection.
- E. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
1. Joint Type: Snug tightened.
- F. Weld Connections: Comply with AWS D1.1/D1.1M for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.

END OF SECTION 05120