SECTION 33 05 09

STEEL PIPE

Last Updated: March 3, 2014

Part 1 GENERAL

1.1 CODES AND STANDARDS

A. Commercial Standards**:** The following standards are listed for convenience only. All specified standards, whether listed or not, shall apply to the Work.

1. ANSI/AWWA C200 Steel Water Pipe 6 In and Larger
2. ANSI/AWWA C205 Cement-Mortar Protective Lining and Coating for Steel Water Pipe - 4 In and Larger - Shop Applied.
3. AWWA M-11 Steel Water Pipe - A Guide for Design and Installation

Part 2 PRODUCTS

2.1 JOINT DESIGN

A. Unless otherwise approved, the standard field joint shall be a lap joint. The joint shall be either single welded full circumferential lap joint or double welded fully circumferential lap joint depending on pressure and site requirements.

2.2 TEMPERATURE CONTROL LAP JOINT:

A. Provide a special longer bell end (temperature control lap joint) at maximum spacing of 400 feet to account for movement of the installed pipe due to temperature changes.

2.3 LINING:

A. The lining shall be cement mortar except in instances where the pipe diameter is larger than practical for shop application of mortar lining. In those instances and for special fittings, a polyurethane lining shall be applied.

2.4 COATING

A. Tape wrap with cement mortar overcoat, polyurethane, epoxy, or extruded polyolefin coatings systems are allowed. Hand applied tape wrap shall not be allowed under any conditions. Specials, fittings and connections shall be externally coated with a polyurethane or epoxy coating system, applied from end to end of pipe joint on all specials, fittings, and connections.

2.5 MATERIALS

A. Yield Strength: 40,000 psi minimum.
B. Tensile Strength: 60,000 psi minimum.
C. Coil: ASTM A1018/A1018M, SS Grade 40 Type 2.
D. Plate: ASTM A572/A572M, Grade 50.

Part 3 EXECUTION

3.3 DESIGN

A. Pipeline wall thickness shall be designed per AWWA M-11.
B. Minimum wall thickness for handling shall be diameter divided by 240.
C. Maximum total allowable angle for beveled joints shall be 5 degrees per pipe joint. The maximum allowable angle for pulled joints shall be 75% of the manufacturer's recommendations or the angle which results from a ¾-inch pull out from normal joint closure.
D. All fittings and specials shall be properly reinforced to withstand the internal pressure, with circumferential and longitudinal, or external loading conditions, whichever is greater.

3.3 EXECUTION

A. Steel pipe trench shall be backfilled with CLSM (concrete low strength material) to the spring line (50% of diameter).

3.3 OTHER

A. Pipe above ground or in structures shall be shop primed and field-painted.