

1609 - STEEL PILING AND PILE POINTS

SECTION 1609

STEEL PILING AND PILE POINTS

1609.1 DESCRIPTION

This specification governs structural steel piles, steel shells to be utilized as forms for in situ cast concrete piles, steel sheet piling, and fabricated or cast steel pile points.

1609.2 REQUIREMENTS

a. General. Dimensions, standard ASTM/AISC shapes, pipe and tubing sizes, weights, wall thickness, and specific fabrication requirements are as specified in the Contract Documents. Comply with nationally accepted size standards whenever possible. Property requirements for the base steel are governed by the classification, designation, or grade of steel specified in the Contract Documents and with **subsection 1609.2b.**

b. Materials Specifications.

(1) Unless specified otherwise, provide steel piles that comply with the ASTM/AISC standard shape dimensions and ASTM A 6. The majority of the AISC shapes are also governed by the ASTM specification, in that instance, the ASTM requirements prevail. Unless specified otherwise, provide steel that complies with ASTM A 709 Grade 50 or ASTM A 572 Grade 50. As a minimum, each pile section must have the heat number durably affixed to it.

(2) Steel shells with respect to their longitudinal dimension may be of a uniform or tapered section, fluted, helix corrugated, or a non-deformed surface round pipe.

Pipe may be seamless, electric resistance welded longitudinally, or welded in a helix pattern by gas metal arc welding (GMAW) or other acceptable method. Furnace welding is not permitted. Provide pipe or pipe piles for shells that complies with ASTM A 53 Grade B with the hydrostatic and flattening test and chemical requirements waived, or A 252 Grade 2, respectively. In addition, the testing requirements of **DIVISION 1600** for A 53 pipe are not required.

Unless specified otherwise, provide steel for fluted and corrugated shells that complies with ASTM A 568 cold rolled carbon steel sheet SAE 1010, maximum carbon level.

The dimensional and weight tolerances of A 53 or A 252 apply to all steel shells with the diameter of fluted and helix corrugated shells defined by the flute or helix crown diameter. Specify wall thickness in thousandths of an inch. The degree of taper for tapered shells is as defined in the Contract Documents with the outside diameter at any location as previously defined.

Any completed shell, with point, is to be of sufficient rigidity so as to retain the original shape profile, resist the soil pressure, and not permit the influx of water after it and the adjacent shells have been driven into place. As a minimum, each pile section must have the heat number durably affixed to it.

(3) Provide steel sheet piling that complies with AASHTO M 202. As a minimum, each section must have the heat number durably affixed to it.

(4) Pile points may be fabricated or cast from steel as specified in the Contract Documents. For steel piles, provide only cast steel points that comply with ASTM A 148, Grade 80-50. For steel shells, fabricate points out of steel that complies with ASTM A 36 or provide cast steel points that comply with ASTM A 27, Grade 65-35. Other steels and fabrication procedures may be used if granted prior approval by the KDOT. Submit shop drawings that provide detailed dimensions, steel designation, point attachment methods, and any other pertinent information to the KDOT for approval. As a minimum, each point must have the heat or lot number durably affixed to it.

1609.3 TEST METHODS

Conduct all tests required by the applicable AASHTO, ASTM, AISC, or other component or material specifications of **subsection 1609.2b.**

1609.4 PREQUALIFICATION

Not applicable.

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1609.5 BASIS OF ACCEPTANCE

Submit for approval to the project Engineer and MRC a Type A certification (certified mill test report), as specified in **DIVISION 2600**, that governs the analysis of all heats delivered to the project. Components are to be identified according to **subsection 1609.2b**.

The final disposition of structural steel pile sections and points provided through this specification will be completed at the final destination as the result of inspection by field personnel for the quality of workmanship, the delivery condition, the condition after being driven, compliance with dimensional requirements, receipt and approval of the associated required documentation, and proper identification of the components.