

854.2.07

2. Certification

Submit a certification to the Engineer that shows the chemical properties of the material and conformance to the Specifications.

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

The Department will accept the material based on favorable review of the certification.

D. Materials Warranty

General Provisions 101 through 150.

854.2.07 Steel Castings for Bridges

A. Requirements

1. Type

Use steel castings for bridge components that meet the requirements of ASTM A 27/ A 27M for the class shown on the Plans.

2. Certification

Submit a certification to the Engineer that shows the physical and chemical properties of the material and conformance to the Specifications.

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

The Department will accept the material based on favorable review of the certification.

D. Materials Warranty

General Provisions 101 through 150.

Section 855—Steel Pile

855.1 General Description

This section includes the requirements for the following types of steel pile:

- Welded and seamless steel pile
- Fluted steel shell pile
- Steel H-pile

855.1.01 Related References

A. Standard Specifications

General Provisions 101 through 150.

B. Referenced Documents

ASTM A 27/ A 27M

ASTM A 252

ASTM A 709/ A 709M

QPL 37

QPL 44

855.2 Materials

855.2.01 Welded and Seamless Steel Pile

A. Requirements

1. Type

Use welded and seamless steel pile of the specified dimensions that meets ASTM A 252 requirements. However, use a minimum wall thickness of 1/8 in (3 mm).

- a. Ensure that the pile can be driven to the capacity shown on the Plans without crimping, buckling, or otherwise distorting.
- b. Mark each pile with the heat number or a lot number corresponding to a heat.

2. Certification

Furnish all certified mill test reports or inspection reports done by an approved testing laboratory to the Engineer. The reports must certify that the pile conforms to these Specifications and show the physical and chemical properties of each heat or lot of materials.

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

The Department will accept the material based on the certifications or on the results of tests conducted by the Department.

D. Materials Warranty

General Provisions 101 through 150.

855.2.02 Fluted Steel Shell Pile

A. Requirements

1. Type

Use fluted steel shells made of basic open hearth steel that meets the specified dimensions. Use one of the suppliers listed on QPL 44.

- a. Use steel with a minimum tensile yield strength of 50,000 psi (345 MPa).
- b. Use shells with a uniformly tapered lower section, with or without extensions of the same diameter.
- c. Reinforce the driving ends of the shells with a collar big enough to withstand being driven without injuring the shell.
- d. Weld cast steel driving points to the tips of the shells.

2. Certification

Furnish all certified mill test reports or inspection reports done by an approved testing laboratory to the Engineer. The reports must certify that the pile conforms to these Specifications and show the physical and chemical properties of each heat or lot of materials.

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

The Department will accept the material based on the certifications or on the results of tests conducted by the Department.

D. Materials Warranty

General Provisions 101 through 150.

855.2.03 Steel H-Pile**A. Requirements**

1. Type

Use steel for H-pile that meets the requirements of ASTM A 709/A 709M, Grade 36/250. Use one of the suppliers listed on QPL 44.

2. Cast Steel H-pile Points

For each shipment of cast steel H-pile points, submit to the Engineer a report that includes results of tests to certify compliance with ASTM A 27/ A 27M.

Use only the H-pile points shown on QPL 37.

3. Certification

Submit certified mill test reports to the Engineer that show the physical and chemical properties of each heat or lot of materials and compliance with these Specifications.

B. Fabrication

1. Make cast steel H-pile points from cast steel that meets ASTM A 27/ A 27M Grade 65-35 (450-240).

2. Ensure that the points give the maximum protection to the outer corners of the H-pile and have a wide surface area to support the pile flanges.

3. Ensure that the manufacturer's name or identification mark, pattern number, and heat number are cast or stamped on all castings.

C. Acceptance

1. The Department will accept the material based on the certifications or on the results of tests conducted by the Department.

2. The Geotechnical Bureau of the Office of Materials and Research will evaluate cast steel pile points.

D. Materials Warranty

General Provisions 101 through 150.

Section 857—Bronze Bushings, Bearings, and Expansion Plates**857.1 General Description**

This section includes the requirements for the following:

- Bronze bearings and expansion plates
- Bronze bushings
- Self-lubricating bronze bearings, expansion plates, and bushings

857.1.01 Related References**A. Standard Specifications**

General Provisions 101 through 150.

B. Referenced Documents

ANSI B 46.1

ASTM B 22, Alloy UNS91100

ASTM B 100, Alloy UNS 51000

ASTM B 584 Alloy UNS C86200