

SECTION 107500 - FLAGPOLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Provide all labor, materials and equipment as necessary to complete all work as indicated on the Drawings and specified herein.
- B. This Section includes ground-set flagpoles made from copper alloy (bronze).

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide flagpole assemblies, including anchorages and supports, capable of withstanding the effects of wind loads, determined according to NAAMM FP 1001, Guide Specifications for Design of Metal Flagpoles.
 - 1. Base flagpole design on nylon or cotton flags of maximum standard size suitable for use with flagpole or flag size indicated, whichever is more stringent.
 - 2. Basic Wind Speed: 120 mph; 3-second gust speed at 33 feet above ground.

1.4 SUBMITTALS

- A. Product Data: For each type of flagpole required.
- B. Shop Drawings: Include elevations and details showing general arrangement, jointing, fittings and accessories, grounding, and anchoring and supporting systems.
 - 1. Include details of foundation system for ground-set flagpoles.
- C. Structural Calculations: For flagpoles indicated to comply with design loads, include structural analysis data signed and sealed by the qualified Professional Engineer responsible for their preparation.
- D. Finish Samples for Verification: For each finished material used for flagpoles and accessories.
- E. Qualification Data: For Professional Engineer.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain flagpole as a complete unit, including fittings, accessories, bases, and anchorage devices, from a single manufacturer.

1. Obtain flagpoles through 1 source from a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. General: Spiral wrap flagpoles with heavy paper and enclose in a hard fiber tube or other protective container.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. American Flagpole; a Kearney-National Inc. Company.
 2. Baartol Company Inc. (The)
 3. Concord Industries, Inc.
 4. Eder Flag Manufacturing Company, Inc.
 5. Ewing International.
 6. Lingo Inc.; Acme Flagpole Division.
 7. Michigan Flagpole Inc.
 8. Morgan-Francis Div.; Original Tractor Cab Co., Inc.
 9. PLP Composite Technologies, Inc.
 10. Pole-Tech Company Inc.

2.2 FLAGPOLES

- A. Flagpole Construction, General: Construct flagpoles in 1 piece if possible. If more than one piece is necessary, comply with the following:
 1. Fabricate shop and field joints without using fasteners, screw collars, or lead calking.
 2. For tapered flagpoles, provide flush hairline joints using self-aligning, snug fitting, internal sleeves.
- B. Exposed Height: 35 feet.
- C. Copper-Alloy (Bronze) Flagpoles: Provide entasis-tapered flagpoles fabricated from seamless pipe or tube complying with ASTM B 43 or ASTM B 135, alloy UNS C23000 (red brass, 85% copper).
- D. Foundation Tube: Galvanized corrugated-steel foundation tube, 0.064-inch minimum nominal wall thickness. Provide with 3/16-inch steel bottom plate and support plate; 3/4-inch diameter, steel ground spike; and steel centering wedges all welded together. Galvanize steel parts, including foundation tube, after assembly. Provide loose hardwood wedges at top of foundation tube for plumbing pole.
 1. Provide flashing collar of same material and finish as flagpole.
 2. Provide steel ground protectors extending 12 inches above ground and 6 inches below ground for steel flagpoles where flashing collars are not provided.

2.3 FITTINGS

A. Finial Ball:

1. Manufacturer's standard flush-seam ball, sized as indicated or, if not indicated, to match flagpole-butt diameter.
2. Spun copper alloy, finished to match flagpole.

B. Internal Halyard, Winch System: Manually operated winch with control stop device and removable handle, stainless-steel cable halyard, and concealed revolving truck assembly with plastic-coated counterweight and sling. Provide flush access door secured with cylinder lock. Finish truck assembly to match flagpole.

C. Halyard Flag Snaps:

1. Provide 2 bronze swivel snap hooks per halyard.
2. Provide with neoprene or vinyl covers.

D. Plastic Halyard Flag Clips:

1. Made from injection-molded, UV-stabilized, acetal resin (Delrin). Clips attach to flag and have 2 eyes for inserting both runs of halyards. Provide 2 flag clips per halyard.
2. Product: Subject to compliance with requirements, provide "Quiet Halyard Flagclasp" by Lingo Inc.; Acme Flagpole Division.

2.4 MISCELLANEOUS MATERIALS

A. Concrete: Comply with requirements in Division 32 for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 4000 psi.

B. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.

C. Sand: ASTM C 33, fine aggregate.

2.5 FINISHES

A. Metal Finishes, General: Comply with NAAMM's, Metal Finishes Manual for Architectural and Metal Products, for recommendations for applying and designating finishes.

B. Copper Alloy (Bronze):

1. Finish designations prefixed by CDA conform to the system established by the Copper Development Association for designating copper-alloy finishes.
2. Medium Satin Finish, Lacquered: CDA-M32-O6x (Mechanical Finish: Medium satin; Clear Organic Coating: Air dry, to be specified). Clear, air-drying, acrylic lacquer specially developed for coating copper-alloy products, applied by air spray in 2 coats in accordance with manufacturer's written instructions, with interim drying, to a total thickness of 1.0 mil.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Foundation Excavation: Excavate to neat clean lines in undisturbed soil. Remove and dispose legally off campus, all loose soil, foreign matter and moisten earth from excavation and before placing concrete.
- B. Provide forms where required due to unstable soil conditions and for perimeter of flagpole base at grade. Secure and brace forms and foundation tube, sleeve, or anchor bolts in position, to prevent displacement during concreting.
- C. Place concrete immediately after mixing. Compact concrete in place by using vibrators. Moist-cure exposed concrete for not less than 7 days or use nonstaining curing compound.
- D. Trowel exposed concrete surfaces to a smooth, dense finish, free of trowel marks, and uniform in texture and appearance. Provide positive slope for water runoff to perimeter of concrete base.

3.2 FLAGPOLE INSTALLATION

- A. General: Install flagpoles where indicated on Drawings and according to manufacturer's written instructions.
- B. Foundation-Tube Installation: Install flagpole in foundation tube, seated on bottom plate between steel centering wedges. Plumb flagpole and install hardwood wedges to secure flagpole in place. Place and compact sand in foundation tube and remove hardwood wedges. Seal top of foundation tube with a 2-inch layer of elastomeric joint sealant and cover with flashing collar.

END OF SECTION 107500