
SECTION 1000 - ALUMINUM FLOATING DOCKS AND ACCESSORIES

PART 1 - GENERAL**1.01 DESCRIPTION**

The work covered under this section shall consist of the manufacturing and/or supplying of aluminum floating docks, pile guides, cleats, fendering, anchorage systems and other marine hardware and accessories as may be shown on the plans. The manufacturer shall provide final shop drawings to the Owner for approval.

Approved manufacturers of aluminum floating docks are listed in Part 4 of this document.

1.02 STANDARDS AND SPECIFICATIONS

The manufacturer may be required to submit a list of previous experience on similar projects. If required by the Owner. The previous experience record will be submitted to the Owner or his designated representative within 24 hours after the bid time.

The installing contractor shall be a qualified **Marine Contractor** licensed by the State of South Carolina.

The deck and frame structural components of floating docks shall be designed with minimum safety factors on working stress which conform to those set forth in the latest issue of the Aluminum Association's *"Specifications for Aluminum Structures"* for buildings and similar type structures.

All aluminum floating docks, pile guides, cleats, fendering, anchorage systems and other marine hardware and accessories must meet the requirements set forth in the *"Manual of Design Guidelines for Boating Access Sites"* prepared for the South Carolina Department of Natural Resources by Pace Engineering Consultants, Inc. Copies of this document can be obtained, by request, from the SCDNR, Engineering Section (address below).

All floating docks must receive approval for use by the Owner no later than 2 weeks prior to the scheduled Bid Date to be included in the Bid Documents. Dock manufacturers may submit a request for approval to:

SCDNR, Engineering Section
1000 Assembly St., Room 134
Columbia, SC 29201

Submittals shall include the following as a minimum and shall be submitted in accordance with paragraph 3.3 of the Instructions to Bidders (AIA Document A701).

- A. Dimensional layout of docks and piles, or other anchorage system to be furnished under this contract.
- B. Engineering calculations showing compliance with the design criteria specified within the aforementioned Specifications and Guidelines. All calculations will be stamped with the seal of a qualified licensed, professional engineer licensed by the State of South Carolina.
 1. Compliance with combined live and dead load requirements considering both bending and deflection.
 2. Compliance with freeboard requirements under normal load conditions.

C. Typical sections or details of the following:

1. Floating docks, including flotation.
2. Anchorage system.
3. Cleats.
4. Fendering.

PART 2 - MATERIALS

2.01 DESCRIPTION

The following requirements are a minimum and must be met by each dock fabricator in accordance with the requirements of aforementioned section entitled "GENERAL".

2.02 STRUCTURAL ALUMINIUM

All structural aluminum alloy shapes to be 6061-T6. Metal for docks to be 6061-T6 aluminum alloy. 6061-T6 shall be extruded in accordance with the requirements of applicable sections of Federal Specifications QQ-A-200. Mill certification is required on all Aluminum alloys.

2.03 MOORING CLEATS

Cleats shall be made of Stainless Steel and be bolted onto the aluminum dock.

2.04 CONNECTORS

Stainless steel bolts, nuts, washers and screws shall be type 18-8 (300 Series).

2.05 FLOATATION

All flotation shall consist of corrugated aluminum pontoons, unless otherwise noted on plans or approved by Owner or Owner's authorized representative. Corrugated aluminum pontoons shall be filled with closed cell polyurethane with 2 pounds PCF density (no loose beads accepted).

2.06 DOCK FENDERING

Wood dock fendering shall be (2) 3"x8" around outside perimeter of docks where shown on the drawings, unless otherwise noted on plans or approved by Owner or Owner's authorized representative. Fendering shall be Southern Pine No. 1 Stress Grade with a minimum CCA (Copper Chromium Arsenate) or ACQ (Alkaline Copper Quat) content equal to 0.6 pounds per cubic foot – moisture content not to exceed 19 percent after treatment. All wood shall comply with American Softwood Lumber Standards PS-2070. Each piece of lumber shall be identified by the grade and treatment mark of a recognized organization or independent agency certified by the American Lumber Standards Committee, Washington, DC to grade the species. All lumber specified for treatment shall be treated to the requirements of American Wood Preservers Association AWPA UC4B. Certification of treatment and grade of lumber must be provided to the Owner.

PART 3 – EXECUTION

3.01 DESIGN REQUIREMENTS - ACCESSORIES

3.01.01 Decking

The decking shall be designed to withstand a live load of 50 pounds per square foot. Allowable deflection shall be $L/180$ where “L” is the free span between cross members in Inches.

3.01.02 Mooring Cleats

Cleats shall be designed to withstand a mooring line load of 1500 pounds in any direction.

3.01.03 Anchors

Anchoring devices for floating docks shall allow free movement of the dock, while minimizing damage due to normal dock movement caused by tides, boat wakes, water fluctuation and seasonal winds. Anchoring devices shall be of sufficient number to restrain a uniform lateral force of 150 pounds per linear foot applied along the entire length of the dock.

3.02 DESIGN REQUIREMENTS - FLOATATION

For normal installations, aluminum floating docks shall be designed to withstand a minimum Uniform Live Load of 20 pounds per square foot applied vertically. For high use installations such as “Event Docks”, the minimum Uniform Live Load may be up to 60 pounds per square foot applied vertically as specified on the plans.

The flotation shall be sized to provide a Minimum Freeboard of 9 inches under Dead Load plus Uniform Live Load, plus a Point Load of 450 pounds applied at any location on the dock’s walking surface, and shall provide a Minimum Freeboard of 15 inches (18 inches in salt water) freeboard under Dead Load plus Uniform Live Load only. Maximum allowable freeboard under Dead Load only is 24”.

3.03 FABRICATION REQUIREMENTS - ACCESSORIES

Any potentially corrosive installation of dissimilar material shall be properly insulated to minimize corrosion in a marine environment.

3.03.01 Decking

Decking shall be extruded 11.62” ribbed aluminum slats with ribs at a minimum of 3 inches on center to provide a non-skid surface and shall not exceed 12 inches in width with not more than 3/8-inch air space between the slats. The legs of each decking slat shall be welded to the side members and to any longitudinal members with a minimum of 1-1/4 inches of weld per leg. The decking slats shall be placed transversely on the dock

3.03.02 Mooring Cleats

Boat cleats on aluminum-decked docks shall be bolted on with stainless steel bolts, nuts and washers. All cleats shall be installed every 8 feet or in locations as shown on plans.

3.03.03 Anchors

Anchoring devices, including pile guides, shall be bolted or welded to the piers and docks in locations and according to the details shown in the plans.

3.04 FABRICATION REQUIREMENTS – STRUCTURES

Cleats and other accessories shall be welded or bolted as shown in the plans. Wood fendering shall be installed in the shop. Flotation may be shipped detached for easier unloading and shipping.

3.05 CONSTRUCTION REQUIREMENTS – STRUCTURES

Aluminum decked floating docks shall be anchored with metal pile guides or other anchoring devices bolted to the dock frame. Floating docks must move freely during the entire cycle of water level extremes with normal expected wind condition.

PART 4 – APPROVED DOCK MANUFACTURERS

The Owner has approved the following dock manufacturers for use:

1. Gator Dock and Marine
2880 Mellonville Ave.
Sanford, FL 32773
(407) 323-0190
2. Dock Hardware & Marine Fabrication
4701 Adrian Highway
Conway, SC 29526
(843) 650-4400

END OF SECTION
