

EZ Dock Product Specifications



- 4.4 There shall be two sets of “T” nuts at one end of the 60 inch (in) wide dock section placed at equal distances between the three pockets.
- 4.5 There shall be two sets of “T” nuts at both ends of the 80 inch (in) wide dock section. These “T” nuts shall be placed at equal distance between the first and second pockets, and between the third and fourth pockets.

5. Anchorage

- 5.0 The dock system shall be designed to allow for the use of piling of various sizes, spud pipes, cables, or chains attached to a bottom anchor, or stiff-arm attachments for anchorage. Calculations can be supplied at purchaser’s request to support designed anchorage with the assumption that all collected data is accurate. Calculations, permitting, and licensed engineering design available at customer’s expense.

6. Hand Railing Attachment

- 6.0 The dock structure shall have the ability to accept railing which is constructed to meet the standards established by the Americans with Disabilities Act (ADA), States Organization for Boating Access (SOBA) and the National Uniform Building Code (NUBC). The railing shall be constructed of 1.5 inch (in) O. D., 14 gauge steel tubing. The steel tubing shall be finished either by a 0.003 inch (in) Hot-Dip Galvanizing or by powder coating painting process.

7. Gangways and Access

- 7.0 All construction is to be accordance with the minimum provisions of States Organizations for Boating Access (SOBA) and the guidelines stated by, “Marinas and Small Craft Harbors”. Gangways will be offered in several different material options but the offerings for loads, handrails, guardrails, transition plates, float mounts, shore mounts, and general designs will remain constant. Environmental conditions will influence the accessibility. Design layouts and advice can be supplied at request.
- 7.1 Gangways and Access Ramps shall be designed to support 90 pounds per linear foot (lbs/ftln). The deck and structural components shall be designed to support a concentrated load of 400 applied to any 12 inch X 12inch square. Lateral designed wind loads shall not exceed 77MPH.
- 7.2 Handrails shall be continuous along both sides of the of the walking surface and shall extend 12 inch past the walking surface on both ends. The top rail portion shall not be less than 34 inches nor more than 38 inches above the walking surface. The ends of the handrails shall be returned into the handrail body or terminate with no sharp or catching edges. The mounting and components of the handrails shall be capable of withstanding a lateral load of 50 pounds per linear foot.

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7.3 Decking shall be per project specification and be skid resistant and made from marine grade appropriate materials.

8. Main Docks

8.0 The main docks are the walkways which are subjected to the most amount of traffic. These should be designed to provide for comfortable and easy walking widths. Design of the dock system for such things as pumps, power supplies, storage boxes, etc. to be attached to them, the overall width of the dock sections should have a minimum width of 60 inch (in) wide This will provide ample width for pedestrian traffic.

9. Finger Docks

9.0 The finger widths should be designed to allow for safe and comfortable walking widths. For boat or vessel mooring, a 40 inch (in) wide dock is sufficient to provide for finger stability as well as pedestrian safety for finger lengths up to 20 feet (ft) long. If the length of the finger exceeds 20 feet (ft) long, the 60 inch (in) or 80 inch (in) wide docks should be strongly considered.

10. Wind Exposure

10.0 Boat Profile Height – According to the American Society of Civil Engineers (ASCE) manual published in 1969, for the average height profile compared to the length of the boat, the following will apply.

- For a 10 foot (ft) long boat:
ASCE average height is 3 feet (ft).
For future considerations, will assume average heights up to 6 feet (ft).
- For a 20 foot (ft) long boat:
ASCE average height is 3.5 feet (ft).
For future considerations, will assume average heights up to 7 feet (ft).
- For a 25 foot (ft) long boat:
ASCE average height is 3.6 feet (ft).
For future considerations: will assume average heights up to 7.2 feet (ft).
- For all calculations done using the average boat profile heights, it will be considered that 100% of the boats using the dock will be twice the ASCE average profile.

10.1 Maximum Wind Exposure – From studies it has shown that forces caused by the maximum wind exposure comes from an angle to the boat, instead of directly to the side or to the front of the boat. Due to the non-feasibility of designing a dock system to handle a maximum tornado wind gust, it is suggested that a reasonable wind speed should be chosen. According to the design standards set up by the

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Army Corps of Engineers, the dock system should be designed to withstand wind speeds of up to 77 miles per hour (mph) or 15 pounds per square foot (lb/ft²).

- 10.2 Hidden Boats – It is a common practice to use load factors of 10% to 15% for each hidden boat affected by wind force. That is, every boat that is shielded by another boat, either in front of, or on the side of, will have a decrease in the amount of force which is applied to that boat due to the affect of the shielding boat. The use of a force factor of 15% per hidden boat shall be used in any calculations.
- 10.3 Load From Various Directions – In the designing of the boat dock system, if piles are to be used as the means of support, it is necessary to take into account the force being applied in the direction of the maximum wind exposure only. However; if chains, cables, or deadweights are to be used as the means of support, it would be necessary to take into account the wind exposure from all directions, when designing the dock system.

11. Load Design

11.0 Dead Load

- a. The dead load shall consist of the entire dock system plus any additional attachments to the dock system.
- b. Each dock section, without additional attachments, shall provide a **freeboard** of approximately 12.75” inches (in).
- c. The surfaces of adjacent deck surfaces shall have an elevation difference of no more than 0.125 inches (in).
- d. The ends of the fingers shall have an elevation of no more that 1 inch (in) above that of the main dock.
- e. The deck surface of each dock section shall not slope more than 0.5 inches (in) over the 10 foot (ft) length of the dock section.
- f. The deck surface of each 80 inch (in) X 10 foot (ft) dock section shall not slope more that 0.35 inches (in) over the width of the dock section.
- g. The deck surface of each 60 inch (in) X 10 foot (ft) dock section shall not slope more than 0.25 inches (in) over the width of the dock.
- h. The deck surface of each 40 inch (in) X 10 foot (ft) dock section shall not slope more than 0.15 inches (in) over the width of the dock section.

11.1 Live Load Due To Vertical Loads

- a. Under dead load conditions plus an additional 30 pounds per square foot (lb/ft²) of uniform live load, flotation shall provide for a minimum of 7 inches (in) of freeboard.
- b. The dock structure shall support a concentrated vertical load of up to 400 pounds (lb)

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at any particular point on the surface of the deck. The structure shall accomplish this while maintaining flotation.

11.2 Live Load Due To Horizontal Loads

- a. The dock system shall sustain the stated design loads applied by normal current and/or debris which are normal to a particular location. (In extreme conditions other procedures such as additional anchorage, anchorage release, and/or dock system removal may be necessary.)
- b. The dock system shall be capable of sustaining continuous wave action of up to 1 foot and occasional wave action not in excess of 3 feet during storm conditions.
- c. The dock sections shall sustain any loads applied by non-moving ice without damage.
- d. The dock system shall be compatible for the use of any boat or vessel size with a properly designed anchorage/mooring system. Boats or vessels over 35ft should be moored directly to the anchorage system.
- e. The dock system and anchorage shall be capable of withstanding sustained wind loads of 77 miles per hour (mph), or 15 pounds per square foot (lb/ft²), at 100% boat occupancy, unless otherwise specified.
- f. The dock system shall be capable of withstanding the impact force caused by a 35 foot boat striking the end of a finger at a speed of 2 miles per hour (mph) and at an angle of 10⁰ off center.

12. Designing for Layout

The dock system, anchorage, and connections shall be designed according to the recommendations of the American Society of Civil Engineers Manual and Report on Engineering Practice Number 50, "Planning and Design Guidelines for Small Craft Harbors", the revised edition.

Works Cited:

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EZ Dock Inc. 878 Highway 60 • Monett, MO 65708 • 888-654-8168 • fax: 417-235-2232 • www.ez-dock.com



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