

Plasti-Fab Design Manual

Floating Docks





PlastiSpan™ Flotation Billets

Floating Dock or Marina

Plasti-Fab PlastiSpan flotation billets can be used as a flotation medium for a variety of designs for docks and marinas.

The following docks and marinas described are typical for this type of construction. For information on the design and application of floating structures see the Plasti-Fab brochure "Buoyancy Systems: Selection, Application and Specification." Floating dock or marina construction is designed to be located in a calm, protected area, since severe wave action can break up docks or marinas. For more flexible structures build docks and marinas in sections and join with eyebolts and rods, with extra attention paid to anchors or piles. Where more severe conditions are likely to be encountered, consult a Plasti-Fab representative for construction alternatives.

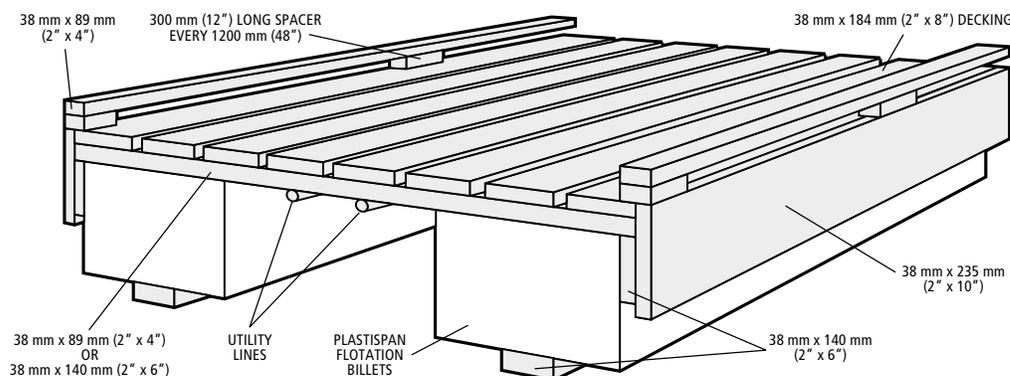
Description

Docks are usually built 1.8 metres (6'0") wide, however, the principles illustrated in this brochure can also be used to construct wider docks.

Dock length may be up to several hundred feet or meters and can be secured at intervals either by piles to the bottom or anchors to the shore or the bottom.

This dock is designed to be built on the shore in sections, with the exception of the 38 mm x 235 mm (2" x 10") outer frame and the tie-up rail.

When construction is completed on shore the sections are towed into position in the water and the 38 mm x 235 mm (2" x 10") outer frame is nailed into place with the joints staggered to the section joints. The tie rail is the last to be added.



Construction

General

Use cedar or treated fir lumber.

All nails, bolts, and hardware should be hot dip galvanized after forming or made from non-corroding material.

Decide on a convenient length of section in which to build the dock and choose the method of attaching billets (see page 3 of the Plasti-Fab brochure "Buoyancy Systems: Selection, Application and Specification.")

Framing

Lay two 38 mm x 140 mm (2" x 6") members on edge at a distance apart equal to the finished width of the dock less 75 mm (3").

Cut cross members to size and nail to 38 mm x 140 mm (2" x 6") members on 600 mm (24") centres to make up the section of the dock. Place diagonal bracing to complete the section frame.

Billets

Place billets in frame by one of the methods shown on page 3 of the Plasti-Fab brochure "Buoyancy Systems: Selection, Application and Specification."

Decking

Nail decking onto top of cross members at this time, with edge of deck flush with outer edge of the 38 mm x 140 mm (2" x 6") frame.

OR

Leave decking off until dock is in position. Nail decking on after the dock is assembled, with staggered joints to make a stronger dock.

OR

Nail decking on at edges with centreboards left out to facilitate installation of utility lines.

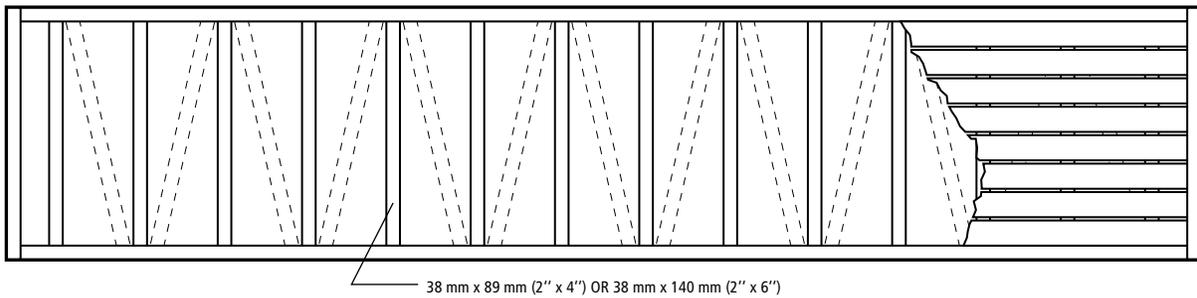
Installation

Tow sections of dock into place. Fasten 38 mm x 235 mm (2" x 10") frame over 38 mm x 140 mm (2" x 6") frame completely around dock. Stagger joints in the 38 mm x 235 mm (2" x 10") frame so that they do not occur at a section joint in the dock.

As construction proceeds, secure the dock by anchoring to the shore or to the bottom, or by driving piles. The number of anchors or piles required will vary depending on the wave action expected. In calm locations, an anchor or a pile for every 30 metres (100 feet) may be sufficient.

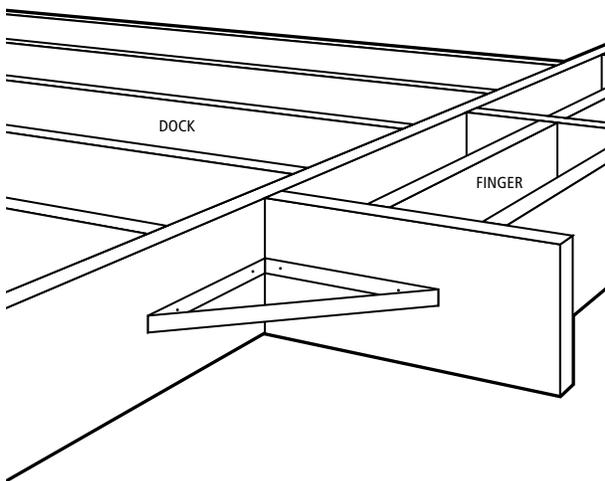
Install water and electrical services and complete the installation of the deck.

Install tie-up rail. Place 38 mm x 89 mm x 300 mm (2" x 4" x 12") wood blocks at 1500 mm to 1800 mm (60" to 72") centres along each edge of the dock and secure temporarily in place. Place a second continuous 38 mm x 89 mm (2" x 4") member over the top of the wood blocks. Ensure that any joints in the continuous rail occur over the wood blocks. Drill through both 38 mm x 89 mm (2" x 4") members at each location and lag screw the rail into place, using a large galvanized washer under the head of the lag screw.



Alternative Construction

Instead of the complete dock being one rigid construction, it can be segmented by joining sections together by eyebolts and steel rod as illustrated. Extend eyebolts out from face of dock to give enough room to work and assemble the dock.



Marina Fingers

This dock construction is suitable for a marina if fingers are attached at right angles to the dock at suitable intervals to accommodate a boat. A finger is usually 750 mm (30") wide supported by a single 300 mm x 500 mm x 2400 mm (12" x 20" x 96") billet at the outer end. The finger is attached to the dock by a fabricated brace approximately 450 mm (18") on each leg and with lag screws used as fasteners. The brace can be fabricated from 38 mm x 10 mm (1-1/2" x 3/8") bar steel, galvanized after fabrication.

