

Dolphin Bay Dock Review of EB Pannkuk from Stature Engineering on Nov 10th 2023

Pier

Good shape (it is new)

Future: recommended to use nails rather than screws for floorboards. If there is a storm, it is better that the decking is torn off rather than the entire structure being damaged (replacing deck boards is much cheaper). Note: screws should be used on the floating dock.

Floating Dock

- CAMA requires that the dock NOT sit on the sand at low tide. We are in violation of this rule, but CAMA doesn't really have an enforcement arm. If dealing with an agency, we should be aware.
- Prevention of piling wear:
 - Suggest using king board (also called star board) instead of rollers.
 - Rollers have mechanical parts that break and don't stand up to the elements. When they break, they will gouge the pilings. The added maintenance outweighs the benefit.
 - When king board rubs against itself, it does not wear down.
 - Placement: 6" by 6" square on dock and 7-8 ft by 1" wide strip on the piling; thickness of 1/2" (need to use flat head screws, pre-drill countersink holes in the king board)
 - There may be issues of available space between the piling and the dock.
- Floating Dock structure
 - The frames of the dock sections need significant repair. Pins are coming out and the framing boards (around the outside of the dock section) are not attached on many of the sections.
 - The floating dock is designed to be held in place by the pilings; it is not designed to support anything else (boats, individual docks, etc). Nothing should be attached to the DB floating dock.
 - Must use stainless steel whenever possible (nails, screws, hinges, etc)
- Pilings
 - There are two purposes of the pilings: the ones that support the floating dock and the ones that should be used for everything else.
 - The pressure treatment of the pilings is only 1.5" deep. Once the wood is exposed, it will deteriorate faster.
 - Height: The piling height should be 8ft above the water line stain that you see on the water line. If there is a storm that raises the floating dock higher than that, the floating dock will be destroyed. Therefore, the super tall pilings can be shorter (which will save us money).
 - Placement: the alignment of the pilings that support the floating dock should have been better (it is possible); just a note for the future
- Coating for hinges

- Hinges should have an anti-corrosion coating, but it isn't cost effective to do this at this point. Future hinges should be coated.
- Rings that hold the floating dock to the piling.
 - The purpose of the pilings along the dock section is to provide support to the floating dock. Those pilings without a ring are not doing anything. We should add rings to those pilings which will provide more support to the floating dock.
- Securing of boats and personal floating docks
 - The pilings securing the DB floating should not be used for any other purpose.
 - Tying up the boats to the outside pilings needs accommodation for the tide. The best choice is a pipe attached to the piling (which must be secured properly), but the use of conduit or floats is fine.
- Better floating dock option: concrete docks
 - Lower center of gravity (much more stable) and sit lower in the water
 - Stronger
 - More expensive (as much as double)
 - CANNOT sit on the sand – to use this option we will have to dredge and keep it dredged
- Storms
 - The older the floating dock, the less likely it is to withstand a hurricane.
 - Boats should be removed from the dock for any Category hurricane.
 - Boat owners that do not remove their boats could be at risk of the HOA requiring owners to make claims on their insurance for their boat's damage to the dock (occurred in Carolina Beach)
- Water
 - Adding a Tee to the water supply so that if there is a leak, only one side of the dock needs to be shut down.
 - Use of PEX is better than PVC.
 - You need to protect the PEX from rub or pinch points.
 - A sleeve around the PEX where it penetrates wood.
 - Wrap insulation around the pipe where it rubs on the floating dock.
 - A flexible line protecting the PEX under the gangway.
- Maintenance
 - This will be key to extending the life of the dock. Includes a periodic check on the dock and doing repairs.
 - One recommendation is Snow Marine 910-443-8172. (Priestley also has recommendations)

Remaining Life

- If you repair the floating dock and continue to provide timely maintenance, it could last another 10 years.
- 20 years is a fair educated guess for the pier life.

