STATIONARY DOCK

Normally, (except in areas where large waves can hit the dock) it is not required to anchor the stationary dock itself. Piles being driven into the bottom of the water will ensure stability. You should anchor any boat with moorings in a way that it will not hit or scrape on the docks, therefore protecting the boat and the docks. If your docks are installed in a shallow area, you should be able to install the mooring easily (on a nice day...). You may also choose a boat lift installation.

FLOATING DOCK

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A floating dock system absolutely requires an anchoring system every +/- 30 feet. Anchoring chain plates should be installed everywhere you plan on anchoring. To install the anchoring weights, lay them on the floating dock, group the appropriate amount of weights (we suggest that you place a piece of cardboard or a piece of wood under in order to protect the dock surface or decking), attach the chain and move the dock over the desired dropping area and then sink them in the water! It is the anchoring weights that will hold the docks in place since there are no piles and that the docks are submitted to lateral pressures by the wind, waves and the boats.

Type and choice of anchoring blocks

Your local concrete products retailer should be able to provide necessary weights, which could be used as anchors. Your local hardware store will have the chain in stock. Make sure you conform with local regulations to use the concrete as anchors, otherwise replace the material.

The blocks should be of a weight of around 125 lb each and of square shape (+/- 1' x 1' x 1') in order to limit their movements once on the bottom (filling a pail is not a good idea as it will roll once on its side). A length of chain with a bolt or a knot at the end can be used as a hook (when pouring concrete blocks yourself, include in the concrete to attach to it later). Also take note that the concrete will loose one third of its weight under water. Different types of bottom such as clay may also affect the capacity of the anchor holding, so adjust accordingly. Muddy bottom usually offers a very good anchoring.

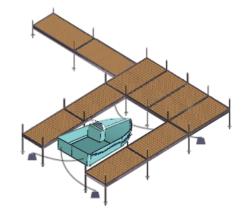
The chain should be rated as: 5/16" galvanized, grade 30 (regular). We also suggest that you use Galvanized Shackle at the underwater attachment, not a zinc plated quick link!

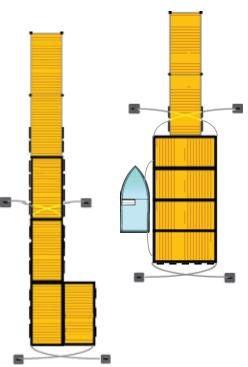
Anchoring examples in calm water areas

- Small crafts, less than 15', e.g. Canoes, Kayaks, Aluminum Boats or PWC (maximum of 2 crafts): minimum of +/- 200 lb per chain on each side.
- Pleasure crafts less than 19' or around 2500 lb each
- (maximum of 1 craft): minimum of +/- 350 lb per chain and on each side.
- Pleasure crafts, Ski or Wakeboard Boats, less than \pm 23' or \pm 4000 lb each (maximum of 1 craft): minimum of \pm 500 lb per chain and on each side.
- Pontoon boat with camper roof, which will catch in the wind: add around 150 lb per chain to the above requirements.

It is also suggested to anchor the dock system at all 4 corners of the dock on which the boats are attached to (see drawing).

If you expect to host other boats during summer, evaluate your needs accordingly.





WARNING:

These are examples and general suggestions only. We try to do our best to guide you with your project. However, some areas may require different anchoring methods than described here. We can not account for differing circumstances. We cannot be held responsible for any incident or damage that may occure because of the use of the techniques described in that document or on our web site.



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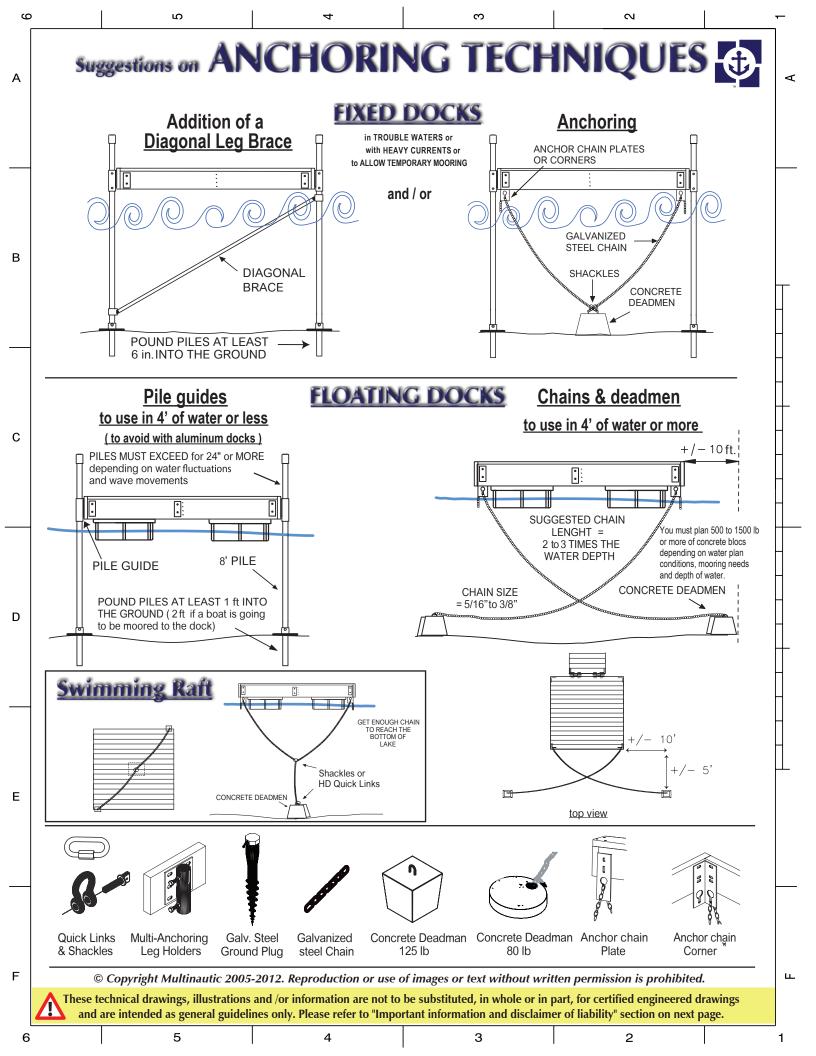
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important information and disclaimer of liability

The selection, assembling, installation, anchoring, inspection, maintenance and winterizing techniques, suggestions or recommendations contained in our company's documentation and on our website or received over the phone and in store, are simply general guidelines, and are only intended to provide any person with general and basic understanding and comprehension of the manufacturing, assembling, installation and maintenance of a residential dock or mooring system. In no way is Multinautic recommending that any of such techniques, suggestions and recommendations be followed, in whole or in part, with regard to any specific case, as many factors may affect each and every individual installation, such as but not limited to, local regulations, severity of the climatic conditions in a specific location, choice of design, preference or necessity, moorings, water depth and bottom conditions, material used or other special circumstances that may affect your specific location. Multinautic may therefore not be held liable or responsible in any way. Any of these technical drawings, illustrations and/or plans, informations are not to be substituted, in whole or in part, for certified engineered drawings and are intended as general guideline only. MULTINAUTIC ASSUMES NO LIABILITY OR RESPONSIBILITY WHATSOEVER, FOR ANY COSTS, EXPENSES OR OTHER DAMAGES, DERIVED FROM OR IN RELATION WITH THE USE MADE BY ANY PERSON OF ANY SPECIFICATIONS, SUGGESTIONS OR RECOMMENDATIONS RECEIVED OVER THE PHONE AND IN STORE OR CONTAINED IN OUR COMPANY'S DOCUMENTATION AND ON ITS WEBSITE, INCLUDING, BUT NOT LIMITED TO. FITNESS FOR A PARTICULAR INTENDED USE IN A SPECIFIC LOCATION, MERCHANTABILITY, ACCURACY OR NOT OF THE TECHNICAL DRAWINGS, ILLUSTRATIONS OR PLANS SHOWN IN MULTINAUTIC'S DOCUMENTATION AND WEBSITE. ANY PERSON MAKING USE OF ANY SUCH SPECIFICATIONS, SUGGESTIONS OR RECOMMENDATIONS PROVIDED BY MULTINAUTIC, INCLUDING ANY OF ITS TECHNICAL DRAWINGS, ILLUSTRATIONS AND/OR PLANS, MUST AND IS SOLELY RESPONSIBLE TO OBTAIN AT ITS SOLE COSTS SPECIFIC CERTIFIED ENGINEER ADVICE AND CERTIFICATION AS TO, WITHOUT LIMITATION, THE PROPER SELECTION, ASSEMBLING, INSTALLATION, ANCHORING, INSPECTION, MAINTENANCE AND WINTERING OF ANY PARTICULAR ASSEMBLY FOR ANY PARTICULAR LOCATION. Without limiting the foregoing, Multinautic does not warrant the quality and accuracy of its material lists or specific measurements, and verification by making your own review and obtaining advice and certification from an engineer must in all cases be made.



INSPECTION AND MAINTENANCE

<u>Frame maintenance:</u> On aluminum docks, a visual inspection of every structural parts, like the junction between frames, or corner and leg holders or other welded or bolted areas is mandatory. Check for cracks, failure or loose bolts. Immediately proceed to repairs, to avoid further damages or injuries. When applicable, refer to the product instructions guide for complete important informations on inspection and maintenance. On a wooden dock, bolted corner assemblies can be looked at to see if any loosening have occurred. If so, tighten them at once or replace them.

<u>Decking maintenance:</u> Many types of sealers may be applied on the decking boards to prevent the wood from drying, cracking and making splinters. Consult your local paint supplier for more details and your municipality for regulations.

Anchoring maintenance: Anchoring chains, shackles, quick links or any other attaching parts are subject to rust and will generally not last more than a dozen of years (some area or water type can cause rust to be more agressive) and therefore, the whole system used at dock level and at anchoring (bottom) need a periodic inspection. Please refer to your insurance company or your municipal, state or provincial laws to know when to proceed. We believe that a periodic revision and replacement when needed is better than waiting to have a break and damages. We transfer the responsability to every dock owner to check his or her dock's anchoring condition and to act accordingly.

When to inspect: Every dock should be visually inspected each month and after every storm, strong winds and waves or conditions or event which may have damaged or loosen the dock.

SUGGESTIONS FOR WINTERIZING OF DOCK SYSTEMS

<u>Stationary docks:</u> ALWAYS remove stationary docks from the water and store properly on the shore, in a manner so that the stationary docks may not become damaged, including but not limited, over a rock or other object susceptible of damaging the stationary dock. Remove all posts and stack them one over the other, the one on top upside down (to avoid fading).

Accessories removal or disconnecting: We do not recommend that you leave your floating docks in the ice for the winter, as probable damages can occur. If you nevertheless decide to leave your floating dock in the ice for the winter, you do it at your own risks and you must make sure to at least remove any ladders or other accessories that reach under the water level, to avoid damage from ice or other floating objects. Disconnect hinges or connector bracket systems from the shore or wall (if applicable). Loosen chains to allow for water level fluctuations, including possible melting season floods. Disconnect docks, space apart with bumpers (car tires do a great job but make sure not to lose them!) and tie with rope. This way, every dock will be able to move independently, thus preventing damage to the structures. If you are moving the docks to a protected area, be sure that the floats will not be rubbing on rocks or other object susceptible of damaging them or the dock structure.

Floating dock removal: Floating docks should be removed from water, mostly from any area where the ice or other floating objects will be moving, water levels fluctuate or current occurs. Unhook anchoring chains, attach them together, tie them to a long floating rope (e.g. regular yellow rope) and let it float! Ensure rope is long enough to retrieve chain in springtime. To remove the floating dock section from the water, create ramp from 2" x 8" boards, and slide the dock on. The "green slime" formed on the bottom of the floats should help the sliding when pulling the dock in and out of the water, but make sure to take all other measures to ensure easy sliding and that no damage occurs. You may also use a winch to facilitate your work, provided the specifications of said winch are appropriate for the size and weight of the dock and provided appropriate precautions are taken to avoid all damages to the dock, other property or persons. Watch the floats so they do not scrape or hit on any rock or other object susceptible of damaging them.