

Storm Preparation for Boats in the Water or on Lifts

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Dock line

With storm season upon us, it is the responsibility of each boat owner who has a wet slip to ensure their boat is well tied up and secure. Remember, a poorly tied up boat is a hazard not only to itself but also to other boats and club property. Responsibility for adequate and sufficient number of dock lines is the responsibility of the boat Owner.

Use 3-Strand Nylon Dock lines!

Most of you know our marina is exposed to prevailing NE winds in the winter and spring months. It is best to orient your boat with the bow facing east. Dock lines need to be adequately sized (more about that later), with key lines doubled for safety, and they need to provide adequate stretch. This is why 3-strand nylon dock lines are best. In pursuit of dock lines that do not stiffen with age, some rope manufacturers have in recent years begun offering pre-spliced dock lines made from "stretchy" polyester. These may be good for large boats in protected marinas, but for tying your boat at the Rudder Club marina, you should skip right over all rope labeled polyester or Dacron or Kevlar or Spectra or any other fancy name.

The right rope for dock lines is plain old nylon.

Nylon has three characteristics that make it ideal for dock lines. It is incredibly strong, it is very stretchy, and it is very good at resisting the harmful effects of sunlight.

The value of stretchiness may not be obvious. When your boat surges against a stiff, unyielding dock line, the load on the line goes from zero to the maximum at the instant the line comes taut. The likely consequence is a broken line or a broken cleat. Even if the rope is strong enough not to break, it is hammering cleats with every surge. Nylon doesn't come taut suddenly, but dissipates the load by stretching.

Three-strand nylon actually has another appealing characteristic that you will surely appreciate: it is less expensive than other lines. The only exception is polypropylene.

DO NOT USE POLYPROPYLENE!

What about polypropylene?

Polypropylene rope is stiff, very slick, and usually bright color, but its most distinguishing characteristic is that it floats. You will be familiar with this rope if you water ski. Polypropylene has a relatively low breaking strength, the quality of the rope is notoriously erratic, and because it is so slick, it does not hold a splice. Nevertheless, some boat owners use polypropylene rope for dock lines, presumably because it is cheap. This is false economy. Polypropylene suffers

badly in sunlight, losing much of its strength in as little as a year. Leave polypropylene in the ski boat.

Braid or Three-Strand?

Nylon rope is available in both braided and three-strand twist construction. Each has its advantages.

Braided line looks "dressy." It has better abrasion resistance than three-strand, and typically it is slightly stronger. Braided line has a tendency to snag on rough pilings. The main advantages of three-strand nylon for dock lines are that it doesn't snag, it is easy to splice, and it is considerably less costly than braided rope. Three-strand rope also has the significant advantage of being more elastic than braid. As a practical choice for dock lines, three-strand nylon is unbeatable. How often is the best option also the least expensive?

What Size Dock lines Do I Need?

Since larger diameter line takes longer to chafe through, a case might be made for selecting the largest diameter that will fit your cleats. But as the line diameter gets larger, it also becomes less elastic, which is not necessarily good. The line diameters shown in the chart below should deliver both sufficient strength and the beneficial effects of elasticity.

Line Diameter

Boat Length 3/8" up to 25'

1/2"

up to 35' 5/8" up to 45'

3/4"

up to 55'

What length?

Each boat and each slip requires careful attention to dock line length. You can use your old lines or temporary lines as a guide. Tie you boat so the lines allow the boat to move up and down with the tide but not so loose that your boat rubs a dock or piling or possibly your neighbor's boat! Be sure to make allowances for eye splices and then make up your new lines to those lengths. Nothing is more convenient than pulling into your slip and simply dropping eyes over your deck cleats. The swing from low to high tide at the Rudder Club is typically about a foot and usually never more than two feet. In recent years, the highest recorded tide at the Rudder Club dock was +3.46 feet on September 27, 2004. (We also lost most of our dock planking that day) The lowest recorded tide in recent years was -1.62 feet occurring on January 9, 2009. When tides get this extreme you have to visit your boat and adjust your lines!

A minimum dock line setup should include eight primary dock lines, two for the port bow, two for the starboard bow, and two for each side of the stern. In addition, you need spring lines, the longer the better, to keep your boat from moving excessively, particularly to keep the bow or stern away from the main dock. Long spring lines serve to hold your boat in position but long enough to allow the boat to rise and fall relative to the dock as the tide changes.

Eye splice

All dock lines should have an eye splice in one end. For permanent dock lines, the eye will be in the boat end of the line, and it should be just large enough to fit over the horns of the boat's mooring cleats. A small eye will be unlikely to come loose, but for complete security you can feed the eye under an open-based cleat before looping it back over the horns.

A knot is a poor substitute for a proper splice. A bowline, for example, reduces the breaking strength of a line by about 40% while a splice retains 95% of the rope's strength.

Chafe protection

Dock line failures are almost always a result of chafe. Unfortunately, it is nearly impossible to rig dock lines so that they never rub against the dock or the boat. Protect your investment including the dock lines and your boat by sliding a foot or two of heavy-duty hose over each line and tying it in position to take the abrasion. This is also why the primary lines need to be doubled or even tripled. Waiting until your boat is bucking up and down in its slip in a blow is no time to start rigging up chafe protection.

What about Cleats?

You can have the best dock lines ever made but still lose your boat. In the tropical storm of 2008 (the "no-name storm") two boats were badly damaged at our club resulting in one of them being totaled. The cause? The bolts holding the cleat on one of the boats failed. Typically, stainless bolts are used to fasten cleats to the deck. These bolts are austenitic stainless steel and are subject to stress corrosion cracking over a long period of time in a salt environment. If your boat is over 20 years old, the bolts holding your cleats to the deck are suspect. Stainless is nice and shiny until it cracks and fails. The jerking motion of the boat pulling on the dock pilings through the dock lines is sufficient to break a cracked bolt. We have seen intact dock lines with the cleats still tied to them, but the boat is somewhere else.