



PORTLAND HARBOR MASTER

Captain Kevin J. Battle

Port of Portland Maine

Serving under the Board of Harbor Commissioners for Portland Harbor

2 Portland Fish Pier, Suite 105, Portland, Me. 04101

Office: 207-772-8121 / Cell: 207-831-6962

MOORING and ANCHORING FAQ

MOORING

How much weight is needed?

To determine the minimum weight of a mushroom mooring, multiply the boat's length overall (ft) by the beam (ft). The product is the minimum mooring weight in pounds. LOA (ft) X Beam (ft) = minimum mooring weight. (Example: Boat length 31 ft. X beam 10 ft. = 310 lbs.) More weight is needed when mooring in an exposed area.

How long should my mooring chain be? Why are there two chains? Chapman's recommends two sections of galvanized chain: a heavier, primary chain and a lighter, secondary chain. The primary (ground or bottom) chain lies on the bottom. Its length should be 1.5 X water depth at maximum high tide. The secondary (riding) chain, or upline, is connected to the ground chain with a galvanized shackle or swivel. It's usually half the diameter of the ground chain and equal in length to water depth at maximum high tide. The heavier chain is not used for the entire run so that the mooring buoy does not have to support an excessive amount of weight.

Mooring Pendant: The pendant attaches the boat to the mooring system and goes between the mooring buoy (or ball) and the vessel. Large-diameter, three-strand nylon line is used because its inherent elasticity (stretching about 10 percent under a load equaling 20 percent of its tensile strength) allows it to act as a shock absorber. Polyester or Dyneema line is preferred by some for better chafe resistance. Length should be about 2 1/2 times the boat's freeboard (height of deck above water). The diameter should be as large as is practical—but it must be able to fit through bow chocks and around a bow cleat.

Effective chafe protection is recommended for the point where the pendant passes through a chock or goes over the side. This is critical, as failure caused by chaffing at this location is one of the main reasons boats end up on the beach. A light pick-up buoy at the boat end makes it easy to grab the pendant. (Inspect your pendant weekly for chaffing.)

ANCHORING

How much weight is needed?

A weight of 5 to 10 times the boat length is a good rule of thumb, as a bare minimum. The heavier the better, within your ability to safely haul the anchor when needed.

How much line do I need?

Allow, at a minimum, Calm waters: 3-5 times as much line as the depth of water you are anchoring in. If the weather deteriorates, or in strong currents, increase the line-to-depth ratio to 5-7 times the depth or more as needed.

Always anchor by the bow – anchoring by the stern can result in swamping and flooding.

Effective chafe and deck protection are recommended for the point where the anchor line passes through a chock. This is critical, as failure caused by chafe at this location is one of the main causes of anchorage failure.

How heavy should my anchor chain be?

The chain should be as large as practical; make the riding chain at least double the size of the chain on your anchor rode.

How do I estimate the weight of my boat?

Check the manufacture's placard or search for your boat make and model's specs on the internet.

If you can't find the specs for your boat:

1. Go to a truck or municipal weigh station. Weigh vehicle, trailer, and boat together.
2. Launch your boat.
3. Return to the scale. Weigh the vehicle and trailer without the boat.

The Harbor Master strongly suggests never going with the above MINIMUMS. ALWAYS overestimate to better handle unexpected adverse weather conditions!