This guide offers advice for laying a drying mooring attached to sinkers, the most common method used within Chichester Harbour.

A boat left on a swinging mooring, particularly for long periods, requires a safe mooring. The mooring must be totally reliable and able to withstand the variety of conditions likely to arise, including the very worst. To achieve this component parts of the mooring must be fit for the purpose. With the correct specification and maintenance a mooring offers a secure and safe berth for a well founded vessel.

Mooring Site: When siting a mooring you should be aware of the following dangers:

i. The topography of the sea bed varies and a drying mooring may not be suitable for all craft. Licensees should satisfy themselves the vessel is suitable for the given ground.
ii. Moorings rarely have a unique swinging circle and in unfavourable combinations of wind and tide the possibility of contact with a neighbouring vessel always exists.
iii. Where this is limited space it is not always possible to accommodate safely the maximum length of vessel for a given class, or more widely dissimilar vessels on adjacent moorings.

Mooring Sinker: The effectiveness of the mooring relies upon the weight of the mooring sinker and chain. A sinker sitting on the seabed will only resist a horizontal pull of less than its own weight. Buried in Chichester Harbour mud its resistance will increase substantially. A properly proportioned sinker will create suction to such a degree that when buried its holding power can be increased by as much as four times. The ring to which the riser is attached should be as large as possible to extend its life.

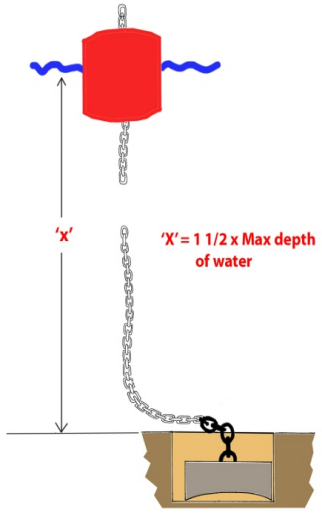
Safety: Working on the mud can be hazardous. Never work alone, carry a portable VHF or mobile phone in case of emergencies.

Although the use of a sinker is the most common means of securing a mooring to the seabed in Chichester Harbour it is not always the most appropriate, in some circumstances a ground chain should be used. This is particular important when the sinker is likely to be exposed.

Sinker details: A sinker of 250Kg would be sufficient for most drying moorings, vessels over 7m would require a heavier sinker. The sinker should be dug into the mud so that it does not protrude. This is necessary for two reasons: (i) to prevent damage, should the boat dry out on to the mooring sinker, and (ii) as previously described, this also greatly improves the holding power of the sinker.

The Riser: The length of the chain required for the riser is determined by the depth of water, size of riser chain used and the size and type of boat using the mooring, and the available sea room.

For a drying mooring in a sheltered area of the harbour, the Conservancy would generally recommend a riser of 1½ times the maximum depth, using19mm mid link chain, attached to a sound sinker or ground chain. In very soft mud a lighter riser chain is recommended to help prevent scouring out of the sinker, as the boat swings on the mooring.



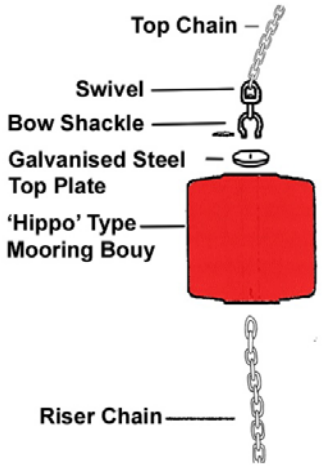
Choice of Material: The choice of chain for the mooring is of paramount importance. A mild steel chain is considered the best compromise for mooring use. The level of content in the steel should be kept below 0.30% and manganese below 1.00%, the lower the better. This will permit the use of Grade 30 or 40 mild steels, which have been found to be the most suitable for use in a marine environment. The use of any alloy steel chain should be avoided.

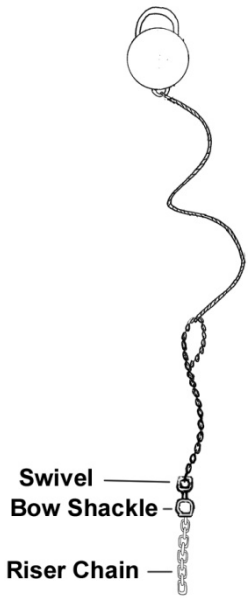
The use of shackles should be kept to a minimum, one attaching the riser to the sinker and one to the buoy.

If the mooring is being used by a heavy displacement vessel it maybe wise to incorporate a length of heavy chain attached to the sinker to increase the holding power of the mooring and also to absorb some of the snatch in heavy weather at the top of the tide.

Mooring Buoy (Option 1): A chain riser will need a substantial buoy to support the weight of the chain. The riser chain is passed through the centre of the buoy and secured by a shackle resting on a galvanised plate. A stainless steel swivel is then attached to the buoy which enables the top chain to rotate without snagging or twisting.

The Conservancy use a galvanised short link chain as a top chain to moor the vessel. This should be kept as short as possible to stop the buoy rubbing against the hull of the boat. A pick-up buoy is attached to the end of the top chain for retrieval when using the mooring.





Mooring Buoy (Option 2): In this option the weight of the riser is not supported by the mooring buoy, a pick-up buoy marks the mooring location and for recovering for use. A swivel is fitted to the riser to prevent the chain from twisting when the boat is on the mooring.

The pick-up buoy used should be large enough to be clearly visible at all times so that it does not become a navigational hazard; the rope between the buoy and the riser should be kept to a minimum so that excess rope does not float and cause a problem to passing vessels. The buoy should also be large enough to enable the mooring location code, number and mooring Class/Category to be clearly marked.

Assembling the Mooring: Unless the mooring is a complete all-welded assembly, shackles will have to be incorporated in to the mooring. This builds weakness into the mooring and therefore shackles at least one size larger than that of the chain should be used.

Shackle pins have been known to work loose and fall apart and should be securely moused with wire or plastic tie-wraps; ideally the shackles are arc welded after assembly. Galvanised shackles should not be used when fitted underwater as the galvanised coating soon breaks down with wear and the dissimilar metals will then hasten corrosion of the shackle. It is important that a swivel is incorporated in the mooring to stop twisting and undue wear on the riser.

Siting a Mooring: Placing the sinker precisely to give adequate swinging room is an important factor; especially where there are multiple rows of moorings. Guidance is available from the Conservancy's Mooring Officer, who on request will lay a marker buoy in the correct location prior to the sinker being laid.

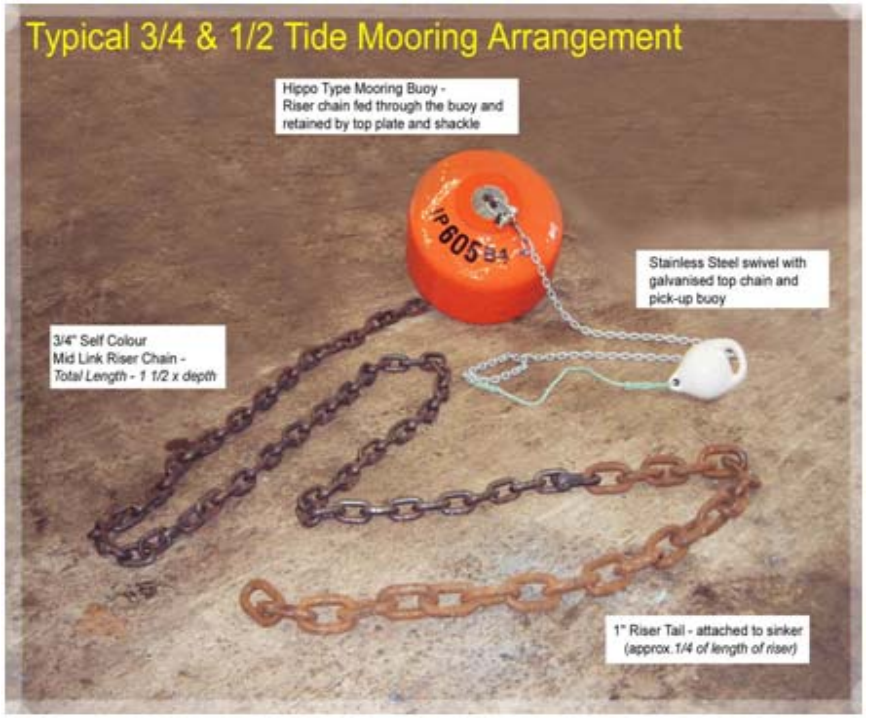
Maintenance: Every system of maintenance is based upon regular inspection. Annual checks of the chain, mooring buoy, shackles and swivel are necessary to ensure that the integrity of the mooring is maintained. It is advisable that new moorings are closely monitored to establish wear rates. The effects of electrolysis, erosion and corrosion in a marine environment will accelerate the wear rate, even more so when the gear is exposed to the air when the tide goes out!

The mooring is only as strong as its weakest link – check it regularly.

Should you have any queries about your own mooring equipment please contact the Moorings Officer at the Harbour Office – 01243 510980

NB: This leaflet is for guidance only; the Conservancy accepts no liability for any issues arising from this guidance.

A Guide to Laying a Drying Mooring in Chichester Harbour



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