SYC Mooring specification

General – Ensuring that one's mooring does not fail is extremely important. It is not just your own boat that is put at risk, but others that a drifting boat might collide with. Network Rail cut the masts off boats that run aground with rigging overhanging the railway track.

Riser chain should be of sufficient size to maintain adequate strength despite the inevitable wear and corrosion that occur during a season. For this reason 12mm chain is considered to be inadequate for riser chains except for small dinghies.
Heavier chain gives a moored boat a smaller turning circle. Big shackles are less likely to fail than small ones.
Lower Exe Mooring Authority (LEMA) have considerable experience with moorings and their recommended specifications can be found at: http://www.lemainfo.com/Info/Mooring_Schedules

Bottom chain – heavy ship chain (30/40mm) attached to either a large (1 ton) block (Simon Turl) or two anchors (Richard Bentley)

Riser – minimum 16mm, 19mm recommended. Length should be 1.5 x depth of water (i.e. 6 to 7m; based on depth at max springs +0.5m to allow for surges and low barometric pressure etc.)
N.B. 12mm chain, especially long link chain is considered inadequate.
N.B. also that long link chain corrodes faster than short link because the looser links move more. It is however able to accept larger shackles.

Swivel - 20mm galvanised. Stainless is acceptable if above water. Swivels should be inspected for wear to the pin, and replaced when 15% wear is observed.

Buoy – the best buoys are specifically made for moorings, e.g. the hippo buoy
https://www.fendercare.com/marine-products/surface-and-sub-surface-buoyancy/mooring-buoys/
Using round fender-type buoys is an acceptable alternative, but attention must be given to the plastic loop, which wears against the shackle attachment, and the size of buoy should be sufficient to support the weight of riser. 16mm chain weighs 6kg/m, 19mm 8kg/m approx. All buoys should be marked with the appropriate PC or SYC number. Pick-up buoys should be attached to the riding strop with rope.

Riding strop – 24mm multiplait, spliced with thimble, approx. 3m according to boat. Fitted with anti-chafe, looped around strong cleat and lashed to stemhead fitting when on mooring. A keep pin on the stemhead is essential. Please note: Cleats, samson posts etc need to be substantial and very firmly secured with large backing plates, ideally of stainless steel or aluminium. Penny washers on their own are inadequate.

Chain strop – minimum 10mm. Preferably used in conjunction with a shock absorber, either of light nylon or covered bungee as per strops made up by Westward Rope and Wire, Bakers' Yard, Marsh Barton.

Shackles – galvanised (not zinc plated), BS 30323, ideally green or blue pin type with large pins. The largest shackle that will fit the chain should be used. Threads should either be greased with waterproof grease (Duckhams Keenol) or locked with Loctite 248 paste (available from Halfords). All shackles should be firmly tightened. Cheap shackles have minimal galvanising and loose threads, which allow corrosion to set up quickly. The minimum number of shackles and swivels should be used for a mooring, as they are generally considered to be the weakest point.

Mousing – cable ties should not be relied on. Best is stainless wire (ideally 1.6mm or 20swg, available from www.lasaero.com), or Monel wire. All shackles should be properly moused.

Stainless components should not be used below the water.

Replacement – components should be replaced when 15% diameter loss is observed, or 20% at the very maximum. This should be verified by calipers as visual inspection alone can be misleading. Bear in mind that 15% wear is .85Radius =72% of original cross-section, 20% wear is .8R = 64%.

(E.g. for 20% loss 12mm chain should be replaced when it measures 10mm at thinnest place, 16mm at 12.5mm, 19mm at 15mm) Steel appears to corrode at approx. 1 to 2mm per season, which suggests that 12mm chain should be replaced every season, 16mm every 2 or 3 seasons, and 19mm every 4 to 5 seasons. Wear is often more significant than corrosion alone, and for this reason the whole system should be inspected closely. Swapping the riser end-for-end will result in more even wear, especially on drying moorings which seem to experience greater corrosion and wear. Shackles should be replaced more frequently than chain. Remember: the whole mooring is only as strong as the weakest component.

Winterising moorings – risers and boat tackle should be removed from the mooring each winter and a temporary marker buoy left in place. Removing tackle each winter approximately doubles the life of components, and therefore saves money. It also permits close inspection of tackle and early replacement of components.
The club has a mooring raft, equipped with lifting tackle, available at the beginning and end of each season to enable members to do their own winterising and maintenance of moorings. Club members are able and willing to assist those who wish to do so.

Inspection - The mooring should be regularly inspected and components replaced as necessary. Inspections should happen at the beginning of the season and at a point during the season.

Responsibility – the maintenance of a mooring is at all times the responsibility of the boat owner. These specifications are issued as guidelines only, and Starcross Yacht Club does not accept any responsibility for actions taken by mooring owners or their representatives.

Cruiser Committee
November 2017