



Mooring construction guidelines

Length of Vessel (m)	Dry Block Weight * (Kg)	Steel Weight (Kg)	Ground Chain (mm)	Intermediate Chain (mm)	Riser Chain (mm)	Top Rope (mm)
Less than 6	400	250	18	12	10	16
6-8	700	450	24	15	10	18
8-10	900	600	24	15	12	22
10-12	1300	800	28	18	12	30
12-14	1800	1100	36	22	16	34
14+	Check with GW Harbours Department					

* See "Mooring blocks" below

Chain lengths – Refer diagram on reverse

- D Depth of water at the block, sounded at MHWS.
 F Height above water of the bow roller/fairlead.
 G Distance from the bow roller/fairlead to the securing cleat.
 L Length of vessel.

- Ground Chain length = $0.55D$
 Intermediate Chain = $0.55D$
 Riser Chain = $1.1D$
 Top Rope = $1.5F+G$
 Feeder rope to buoy = to suit

Swinging radius. The approximate swinging radius is: $1.7D+L$.

Mooring blocks. When a material is submerged, it will lose some of its weight due to buoyancy. Eg. Concrete will lose about 40% once it is submerged, hence the additional dry weight requirement over steel.

Swivel. The size of swivel used should be at least one size greater than the larger of the two sizes of chain being joined. It can be located either between the intermediate chain and riser chain or between the riser chain and top rope.

Use of shackles. The size of shackle used should be at least one size greater than the larger of the two sizes of chain being joined. Shackle pins are to be securely welded or moused.

Note: Shackles should be kept off the seabed when the mooring is in use, to avoid the abrasive effect of the seabed material on the mousing wire etc.

These specifications are to be used as a guide only. Different types of vessels, moored in different locations will require different mooring specifications.

Factors to consider:

- Heavy/Moderate/Light displacement vessel – i.e. its weight compared to its length.
- Where is the mooring located?
 - Is it subject to adverse weather or sea conditions?
 - Is there any current?
 - What is the seabed material?

For further information phone 04 381 7760, or email harbours@gw.govt.nz



