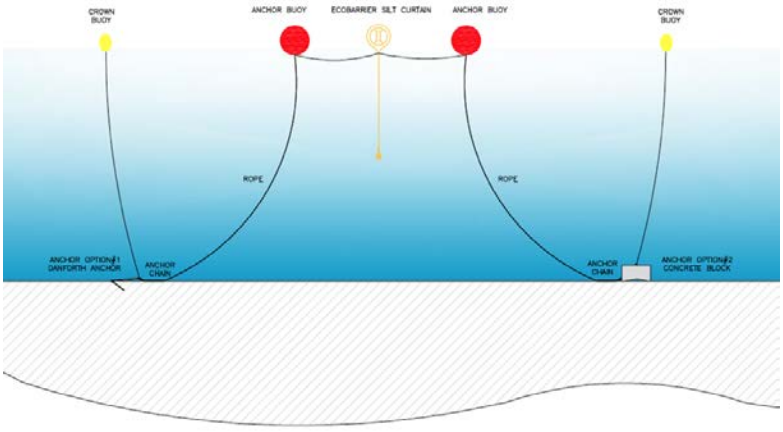
Silt Curtains

Anchoring Section

ecocoast

Technical Note



The diagram on the left shows a typical anchor setup for a silt curtain in tidal or rough waters with the option of Danforth or concrete anchors. The components detailed are:

Crown Buoy & Pickup Line: This is specifically for locating the anchor. On a Danforth anchor, this line should be made from rope and is used to release the anchor from the seabed, as pulling from the stock will only serve to embed the anchor further. On a concrete anchor, this tripping line should be wire rope rated for the lifting capacity of the anchor for retrieval and placement.

Mooring Chain and Rope: A minimum of 2-3m of heavy mooring chain should follow the anchor to protect the rope from abrasion on the anchor, and more importantly, to provide an initial slack in the line to compensate for wave movement. The mooring rope should be 2-3x the depth of the water at HAT, to provide the correct angle of pull to increase embedment of a Danforth or friction of a concrete block. In rougher conditions, this entire line can be replaced by a chain.

The anchor buoy is one of the most important components of the mooring system, and is designed to act as a shock absorber for waves and strong currents. It ensures the direction of pull on the curtain is horizontal to the water, in order to reduce the jerk on the anchor line as waves pass and prevent the flotation at the anchor point from being pulled underwater. Selection of the anchors is dependent on the type of curtain, wave and tidal conditions, water depth and installation duration. Danforth anchors should only be used in calmer conditions in areas with a soft seabed. Offshore, heavy gravity anchors are the preferred anchor method. The anchor spacing should be advised by the manufacturer or engineer on site, based on depth of the curtain, environmental conditions and configuration. Nearly half of all failures in curtains are a result of incorrect anchoring.