# Silt Curtains

## Choice of Depth

ecocoast

# Technical Note

### Silt Curtain Performance

The aim of a silt curtain is to act as a settlement pond and allow the silts time to settle within the contained area to reduce the spread. They are not designed to impound water completely, and it is reasonably expected that some silts will move underneath. By allowing the silts to settle from the upper portion of the water body, the area of spread will be limited significantly and the chance of the silts being re-suspended will be reduced.

### Water Flow

Water should always be allowed to flow underneath the curtain. A minimum 0.5m gap should exist between the weighted, lower end of the skirt and the bottom at LAT. This prevents the skirt from being covered by silts, which may cause submersion of the flotation as the tide rises. It also prevents re-suspension of particles on the other side of the curtain that might be caused by the weighted lower end of the skirt hitting the seabed in waves.

### Exposed Conditions

In tidal and/or wind and wave action situations, it is seldom practical to extend a turbidity curtain depth lower than 3m to 4m below the surface, even in deep water. Silt curtains are less effective in exposed conditions than in sheltered conditions as the water remains turbid, which delays the settlement time. The focus in these installations should be on the wave/tidal forces acting on the curtain rather than on the seabed depth.

### Force Loads

Curtains that are installed too deep will be subjected to very large loads with consequent strain on curtain materials and the mooring system. This can result in curtain failure or dragging of the curtain and anchor system, which may result in a larger environmental issue or cost implications due to forced suspension of works.

Ecocoast can calculate the expected loads on a silt curtain based on skirt depth, if provided with relevant environmental data. This will assist with choice of model and depth.

For more information on the choice of depth, types of curtains or detailed specifications, please contact us. Ecocoast can custom manufacture any curtain to suit local requirements.

**References**

Francingues, N.R. and Palermo, M.R. (2005). Silt curtains as a dredging project management practice. DOER Technical Notes Collection (ERDC TN-DOER-E21), U.S. Army Engineer Research and Development Centre, Vicksburg, MS, USA. | JBF Scientific Corporation (1978). An analysis of the functional capabilities and performance of silt curtains. Technical Report D-78-39, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS, USA. | Radermacher, M. (2013). Effectiveness of silt screens. Master's thesis, Delft University of Technology, Delft, Netherlands.