



CASE STUDY:

WATER

Te Ana Marina

LYTTELTON HARBOUR, CHRISTCHURCH
AUGUST 2017
CLIENT: MARITIME SPECIALIST SERVICES LTD/
FULTON HOGAN

SILT CURTAIN

Silt Curtains are installed in waterways to prevent pollution of the waterway by silt and disturbed sediment caused by construction activities.

A Silt Curtain can either a permeable or impervious structure that sits suspended in the water column to control migrating water borne sediment. Also known as a turbidity curtain, flotation curtain or silt screen, the silt curtain's function is to contain disturbed sediment about one to two meters from the water surface. This allows suspended sediment to settle and drop within the water column by controlling dispersion.

A Silt Curtain provides the necessary environment and time for the suspended sediment to settle to the bottom.

Geofabrics supply a range of Silt Curtains for use in waterways and harbours to prevent pollution by silt and disturbed sediment caused by construction activities.

During the tender process for the Te Ana Marina project Fulton Hogan identified silt and sediment contamination of the Lyttelton Harbour as a potential environmental risk and Maritime Specialist Services Ltd were engaged to supply, install and maintain a Silt Curtain to mitigate this risk.

Geofabrics were approached by Maritime Specialist Services Ltd to supply a Class 2 Silt Curtain with a total length of 105 metres and a draft of 1 metre. This curtain is supplied in 15 metre lengths which are connected together by specially moulded ASTM 962 Z connectors and heavy duty marine zippers. Floatation consists of high density closed cell polyethylene foam floats which are oil and crumble resistant, ensuring continued floatation. The skirt consists of 270gsm non woven geotextile that stops anything larger than 90 microns from passing through. Galvanised chain is sewn into a chain pocket at the base of the curtain to provide ballast. This ballast extends the full length of the curtain allowing for continuous tension.

> Te Ana Marina Case Study – Continued.

The curtain was installed in early August and it was tested three days later during a heavy rain event in which significant volumes of sediment entered the protected area through a stormwater outlet. The curtain was proven to be extremely effective in retaining the sediment in the work area, thus giving the suspended sediment time to settle to the bottom.



Silt Curtain in Use

Silt curtain retaining sediment within the protected area



Silt Curtain in Use

Effective management of sediment-laden stormwater runoff
