

CASE STUDY:

BRIGHTON BEACH GROYNES

**BRIGHTON, SOUTH AUSTRALIA
FEBRUARY 2017**

CLIENT: CITY OF HOLDFAST BAY

ELCOROCK®

The ELCOROCK system consists of sand-filled geotextile containers built to form a stabilising, defensive barrier against coastal erosion.

The robustness and stability of Elcorock geotextile containers provide a solutions for other marine structures such as groynes and breakwaters. These structures extend out into the wave zone and provide marina and beach protection, sand movement control and river training. The size of the container can easily be selected based on the wave climate and other conditions ensuring stability under the most extreme conditions.

Elcorock vandal deterrent containers have a soft finish and the ability to blend into the existing environment creating a more visually acceptable, amenable structure.

Adelaide's beaches are affected by a common phenomenon called longshore drift - the flow of water, in one direction, along a beach occurring as a result of winds and currents. In Adelaide longshore drift flows from south to north and it frequently erodes beaches over time, particularly during storm events when tides are high and sea is rough.

Without sand replenishment, the southern end of Adelaide's beaches will slowly erode and undermine existing infrastructure at the sea/land interface. The objective of Elcorock sand container groynes, laid perpendicular to the beach, is to capture some of the natural sand as well as dredged sand, that moves along the coast. Over time, this process builds up the beach, particularly between the groynes which results in the protection of the existing infrastructure.

Geofabrics met with the city of Holdfast Bay in the early stages of the project to discuss the product, durability and previous projects with a similar application. Due to recent weather events, the beach erosion was extensive and public pressure extreme. The city was therefore keen to accelerate installation to reduce risk of further damage to existing an rock revetment and the adjacent road.

The Elcorock coastal erosion system was selected due to its aesthetic appeal (in comparison to rock groynes), and its relatively low cost installation cost. The fill material was also able to be sourced directly from the beach.

> Brighton Beach Groynes



Filling the Elcorock sand containers

The two groynes were approximately 30 m long and spaced 50 m apart. Each groyne was made of 50, 2.5 m³ Elcorock sand containers.

Geofabrics provided guidance in both planning and installation stages, offering guidance on installation times and process. Geofabrics also assisted onsite during the initial two days of installation to ensure the bags were filled and installed correctly.

Two years later and the beach is looking great with significant build-up of sand occurring, having protected the rock wall and road. With no visual damage to the sand bags, the council is extremely happy with the result and has gained funding for two more groynes in the coming months.



Completed Elcorock groynes blending to the beach in 2017



Elcorock Groynes at the end of 2018 after Winter. Historically, the beach at this time of the year was near non-existent, however the bags are working extremely well, capturing sand and thus building up the beach.

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