



GEOFABRICS CASE STUDY



CONSTRUCTING A SEAWALL AT NUKUFETAU ISLAND, TUVALU

PRODUCTS USED

ELCOROCK® GEOSYNTHETIC SAND CONTAINER

- Made in Australia with Texcel geotextile, a unique staple fibre blend of polyester and polypropylene, providing flexibility and allowing the product to resist the natural forces of the marine environment
- Filled with sand and used to form a stabilising and defensive barrier against erosion in harsh coastal environments by building breakwaters, sea walls, revetments, groynes and artificial reefs
- Highly resistant to abrasion, hydrocarbon, impact damage and UV degradation
- Precise size and shape can be made to meet site specific requirements



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PROJECT DESCRIPTION

Coastal areas are pristine but unstable largely due to human driven erosion. In early 2015 Cyclone Pam hit the island of Nukufetau causing significant damages to infrastructure and livelihood in the Tuvalu island. Nukufetau is susceptible to severe and longer-lasting coastal erosion, major storms and sea level rise, further exacerbated by climate change. Concrete blocks from the former seawall on the island, serving as high wave protection, were dislodged due to the high wind and severe wave actions of the Cyclone.

This warranted for a proper and long-term management of the coastal shorelines of the remote island. A 500m long and over 3m high replacement seawall was constructed helping Tuvalu prepare for a more hazard-prone future.

OUR SOLUTION

Geofabrics, working closely with Hall Contracting in their dredging program, provided detailed design support during installation of the Elcorock geosynthetic containers.

Over 2500 ER250V Texcel 900R was laid along the open stretch of the coastline. With a cost-effective and durable engineered foreshore protection and an increased seawall height, the shoreline was transformed to deflect storm surge and huge swells ensuring reduced coastal vulnerability and improved resilience.



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