

Busselton Foreshore

The world leading **ELCOROCK**[®] shoreline protection system from Geofabrics Australasia is being applied to address the coastal foreshore erosion and management project of the Busselton beach in Western Australia. The foreshore is approximately 3.5 kilometres in length and required a solution that provided community access to the beach area, sand management, re-vegetation, dune protection and the provision and protection of facilities along the foreshore reserve.

Stage 1 of the project is nearing completion and involves the construction of three **ELCOROCK**[®] sand-filled geotextile container groynes to replace the deteriorated timber groynes that were no longer able to protect the foreshore promenade from storm damage. The groyne construction is in conjunction with beach renourishment to provide beach quality and depth for the coming summer weather.

The local community required a multi faceted solution that was cost effective, environmentally compatible, aesthetic in appearance, safe for beach users, durable, stable and long lasting, all capabilities of the **ELCOROCK**[®] shoreline protection system.

Located approximately 200 kilometres south of Perth, the Busselton beach is a popular holiday destination and a premier seaside and coastal playground in an area that includes the Margaret River wine region and premier surfing spots.



Latest News

- **ELCOROCK**[®] website launched, visit www.elcorock.com for updated news, information, case studies and photo galleries.
- **ELCOROCK**[®] CD launched containing lots of information, specifications, photos, videos and more. Contact Geofabrics for a copy.
- Bournemouth Artificial Surf reef under construction in the UK. Visit www.bournemouthreef.com, www.bournemouthsurfreef.com/ or www.bournemouth-surfing.co.uk/community-reef to follow the latest news and coverage.
- Long term UV testing of the **ELCOMAX**[®] vandal deterrent material is underway at TRI, with results expected towards the end of the year. Interim results are very encouraging.

Geofabrics Australasia, along with ELCO Solutions Pty Ltd, manufacture and supply a huge range of products that are incredibly widespread in civil construction, roads and railways, coastal engineering and foreshore protection, landscaping, golf course and landfill construction. You might be surprised to find that you rely on Geofabrics' products every day.



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ELCOROCK[®] NEWS



WRL Flume testing

The **ELCOROCK**[®] shoreline protection system has been at the forefront of the development of the state of the art with developments such as unique vandal deterrent geotextiles, specialised filling and placement equipment and compatibility with marine ecosystems.

The latest research project has involved the detailed analysis of the wave stability of the individual geotextile containers which make up the **ELCOROCK**[®] shoreline protection system.

The Water Research Laboratory, Australia's leading coastal engineering research body was commissioned to carry out the work in their large scale wave flume located at the University of NSW in Sydney. The research program, under the guidance of Professor Ron Cox, involved the analysis of the **ELCOROCK**[®] shoreline protection systems ability to withstand the wave forces that cause coastal erosion.

The WRL research is the most comprehensive of its kind in the world, and was conducted over an 18-month period. There were over 150 tests, where each individual layout was tested to ascertain the limits of the system.

The research has resulted in the development of design curves which can be used to design **ELCOROCK**[®] shoreline protection systems for structural stability – a world first.

ELCOROCK[®] performed better than expected and can be considered a suitable alternative to other traditional materials such as rock, concrete and wood.

The research will be showcased by Geofabrics in a series of seminars around Australia in the coming months so keep an eye on websites -

www.geofabrics.com.au or **www.elcorock.com**
for announcements, dates and locations.



1:10 scale **ELCOROCK**[®] containers in the flume ready for testing

Stockton beach, 12 years later

In 1996, the Newcastle City Council instigated temporary erosion protection to the Stockton Surf Club. Severe erosion to the beachfront had endangered the club building and was at risk of collapse. ELCO Solutions offered a soft solution to the problem and provided **ELCOROCK**[®] sand containers that resulted in this being one of the first engineered sand container structures constructed to protect oceanfront properties.

In the recent severe weather conditions in Newcastle and the Hunter Valley in June 2007, offshore swells up to 17.5 metres were recorded and caused major coastal erosion of beaches and major flooding. The conditions were severe enough for the Pasher Bulker, a bulk coal carrier, waiting offshore to be loaded, to run aground onto the reef off Nobbys Beach.

The **ELCOROCK**[®] sand containers proved effective in preventing any damage to the Stockton Surf Club. Despite sand being eroded from the beach and exposing the sand containers, the structure, being flexible, remained intact and in fact there were no visible signs of displacement. Sections of beach on either side of the Club have been subjected to ongoing erosion by wind and wave action since 1996.



Exposed **ELCOROCK**[®] containers post June 2007 storm event

In contrast to the sand containers, rock armour protection was constructed approximately five hundred metres north of the Surf Club by Council. However, as a result of the latest wave action and loss of sand, rock has been displaced and rendered the beach inaccessible to the public. In addition, to being unsightly, the cost to remediate the rock armour is an expensive and time consuming operation.

Despite the **ELCOROCK**[®] structure initially being of a temporary nature, the sand containers have withstood numerous storm events. The soft solution has proven to be extremely versatile and is popular with the local community. As a result additional containers are now proposed adjacent to the surf club to provide long term storm protection.