

ELCOROCK[®]

Shoreline Protection System

General Brochure



Photo by Katrina Lawrence courtesy of the City of Greater Geelong



QUALITY - SUPPORT - EXPERTISE



ELCOROCK® is a shoreline protection system utilising robust geotextile containers designed to be filled with sand (or other infill material), that are then placed to form a stable, durable structure.

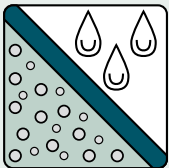
The versatility and durability of the ELCOROCK® containers allow construction of a wide variety of coastal structures – including groynes, walls, reef structures and other applications for marine and inland waterways.

ELCOROCK® is a world-leading system, with structures built on open beaches over 20 years ago surviving Australia's harsh coastal environment. The ELCOROCK® system is supported by extensive research, including design methods, durability reports and environmental analysis.

The ELCOROCK® shoreline protection system is an alternative building material to traditional coastal methods such as concrete, rock armour, steel or timber. Geofabrics supports the ELCOROCK® system with research, specialist installation equipment and design assistance.

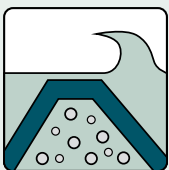
The ELCOROCK® sand container product range covers a large range of sizes and systems ranging from hand filled 40kg containers to hydraulically filled mega sand containers and tubes. Specialist filling and placement equipment is available for most container sizes to provide both a consistent and attractive finish.

FUNCTIONS



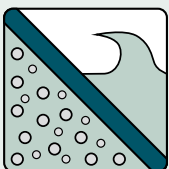
Erosion control

ELCOROCK® structures restrict the loss or movement of sand through wave action, tidal currents and wave currents.



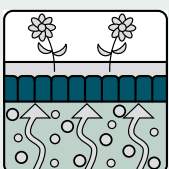
Wave dissipation

ELCOROCK® structures can reduce the size and energy of waves by assisting the wave to break away from the foreshore, thereby providing sheltered waters in the lee of the structure.



Shoreline protection

ELCOROCK® structures protect the shoreline by resisting the erosive forces from wave action or tidal events.



Environmental enhancement

ELCOROCK® structures provide a base upon which organisms grow in the ocean or river systems. Such growth is vital to the health and diversity of the natural environment.



APPLICATIONS

SEA WALLS AND REVETMENTS

The durability, permeability, stability and flexibility of ELCOROCK® sand containers provide an excellent solution for construction of sea walls and revetments.

ELCOROCK® sand containers have a number of advantages over traditional rock sea wall construction methods including -

- Reducing beach contamination as there are no rocks to be displaced.
- Lowering the environmental footprint, due to the use of in-situ materials and reduced need for importation of fill materials.
- Increasing the public amenity through increased public access and lower OHS risk.

The use of vandal deterrent geotextile layers in structures where public access is high increases the durability of the ELCOROCK® structures.



GROYNES AND BREAKWATERS

ELCOROCK® containers are widely used in the construction of groynes and breakwaters, which extend into the wave zone to control the movement of sand and provide marina and beach protection. The type of ELCOROCK® container used is dependent primarily upon the wave climate. The ELCOROCK® containers have proven durability over many years in the aggressive, exposed marine environments. The use of vandal deterrent ELCOROCK® containers provides a softer, visually acceptable finish, allowing the structure to blend into the existing environment.



RIVERBANK PROTECTION

Increased boating or flood activity has led to increased erosion of riverbanks and lake shorelines. The ELCOROCK® system helps resist erosive forces, whether it be through revetment structures, river training, groynes or protecting boat ramps. Using locally available fill material enables ELCOROCK® containers to provide a cost-effective solution. The durability, resistance to UV and abrasion and the soft finish of the ELCOROCK® system all provide advantages over rock structures in inland waterways.



CUSTOM STRUCTURES

ELCOROCK® containers have been used for a wide variety of applications, including artificial reefs, bunds, cofferdams and temporary working platforms. The range and capabilities of our manufacturing facilities makes the most difficult application possible. The ELCOROCK® system has been used in many emergency protection works where rapid installation is required, such as sea wall toe protection and sand dune protection. The system can also be removed after the structure has served its purpose, with little risk or inconvenience to beach users.



ADVANTAGES OF THE ELCOROCK® SYSTEM

Proven Durability	<p>ELCOROCK® structures have been in place for over 20 years in the harsh Australian environment. The durability of ELCOROCK® is proven over many dimensions, including:</p> <ul style="list-style-type: none"> • UV resistant to the harshest conditions in the world, • Vandal deterrent fabric, • Excellent abrasion resistance. <p>In-field durability research confirms the durability of the ELCOROCK® system in the harshest coastal conditions, including cyclones.</p>
Increased Public Amenity	<p>ELCOROCK® structures enhance the public amenity of the coastal area, through –</p> <ul style="list-style-type: none"> • Providing a structure that people can easily access and use, • Reducing beach contamination from rock walls displacing and putting rocks over the beach front, • Reducing the OHS risks associated with foreshore structures, • Reducing the site impact during construction through reducing the number of trucks required to visit site.
Structural Stability	<p>ELCOROCK® sea walls and revetments can be designed for structural stability through proven design methods.</p>
Environmentally Friendly	<p>ELCOROCK® structures provide a base upon which marine growth develops, enhancing the local biodiversity.</p> <p>ELCOROCK® structures also use locally available fill material, reducing the need for trucking of fill materials to site.</p>
Cost Effective	<p>ELCOROCK® structures compare favourably to traditional coastal structures, both with initial installed cost and whole-of-life costings.</p>
Design and Installation Support	<p>ELCOROCK® sand containers are supported by technical assistance from our Geofabrics engineers. Installation equipment is also available to help ensure efficient and correct installation.</p>

SUPPORT DOCUMENTATION

Specifications	ELCOROCK® Data Sheets
Installation Guidelines	<ul style="list-style-type: none"> • ELCOROCK® 0.75m³ Installation Guidelines • ELCOROCK® 2.5m³ Installation Guidelines • ELCOROCK® Mega Containers Installation Guidelines
Support Equipment Documents	<ul style="list-style-type: none"> • ELCOROCK® 0.30m³ & 0.75m³ Filling Frames • ELCOROCK® 0.75m³ J-Bins • ELCOROCK® 2.5m³ Filling & Placement Apparatus • Sewing Machine
Technical Notes	ELCOROCK® Design Guidelines
Other	<ul style="list-style-type: none"> • ELCOROCK® CD • ELCOROCK® Online Seminars • ELCOROCK® Cost Calculator • ELCOROCK® Research Reports

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