

GEOFABRICS®

Smarter Infrastructure



Elcorock®

**COASTAL PROTECTION
SYSTEM**

ABOUT THE ELCOROCK SYSTEM

The ELCOROCK shoreline protection system has been proven through over 20 years of use in harsh coastal environments and is a cost-effective alternative to traditional coastal erosion protection systems made from concrete, rock armour, steel or timber.

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

The geotextile containers are made from Texcel, a durable staple fibre geotextile. It's a versatile system ranging from hand filled 40 kg containers to hydraulically filled 300 tonne mega sand containers and tubes.

TECHNICAL SPECIFICATION

The values published in this leaflet are to the best of our knowledge true and correct. The product specification may change at any time without prior notice. No warranty is expressed or implied. Manufactured by Geofabrics Australasia Pty Ltd to the ISO 9001 Quality Management System Standard.

Test	Standard	Units	0.30 M ³ Containers	0.75 M ³ & 1.2 M ³ Standard Containers	0.75 M ³ & 1.2 M ³ Vandal Deterrent Containers	2.5 M ³ & Mega Standard Containers	2.5 M ³ & Mega Vandal Deterrent Containers
Fibre Type			Polyester	Polyester	Polyester/ Polypropylene	Polyester	Polyester/ Polypropylene
Mass	AS3706.1	g/m ²	800	800	1,600	1,200	2,200
CBR	AS3706.4	N	7,000	7,000	10,000	10,300	13,200
Wide Strip Tensile Strength MD	AS3706.2	kN/m	35	35	40	50	50
Wide Strip Tensile Strength XMD	AS3706.2	kN/m	40	40	65	65	85
Abrasion Resistance MD/XMD	BAW Rotating Drum	% Strength Retained	>50	>50	>70	>60	>75
Seam Strength MD	AS3706.6	kN/m	30	30	35	46	50
Seam Strength XMD	AS3706.6	kN/m	35	35	40	49	55
Abraded Seam Strength	BAW Rotating Drum	% Strength Retained	80%	80%	90%	91%	100%
Hydrocarbon (Diesel) Resistance MD/XMD	AS3706.12	% Strength Retained	N/A	N/A	N/A	>90	>90
UV Resistance 500 Hours	AS3706.11	% Strength Retained	>50	>50	>80	>60	>80
Pore Size o95-Sieve Method	AS3706.7	µm	<75	<75	<75	<75	<75
Permittivity	AS3706.9	s ⁻¹	0.40	0.40	0.28	0.26	0.15
Coefficient of Permeability	AS3706.9	m/s x 10 ⁻⁴	22.6	22.6	28.0	18.9	16.8
Flow Rate @ 100mm head	AS3706.9	l/m ² /s	40	40	28	26	15

Note: All values are typical. MD=Machine direction, XMD= Cross machine direction.

WHAT DOES THE SPECIFICATION MEAN?

We have specified mechanical values in the technical specification which can be used as indicators for the likely performance of the Elcorock system. However, we feel it's important for you to understand why certain parameters have been included:

Test	What is this test?	Why is this data important?
Fibre Type	Fibres used in any marine grade geotextiles should be UV stable and from a traceable and reliable source	UV stabilised fibres are designed to withstand direct sunlight for extended periods of time (years). UV affected fibres lose strength and become brittle which can lead to product failure. ELCOROCK® has been proven in harsh UV conditions in real life installations over 20 years.
CBR	CBR measures a geotextile's tensile strength in a radial protrusion type failure mode.	Sand Containers must have a high level of puncture resistance and allow the ingress of sand into the geotextile to reduce the likelihood of material damage. A composite geotextile which has an added layer of needle punched UV stabilised fibres will act as a vandal deterrent layer.
Wide Strip Tensile Strength	Standard tensile test for comparing similar geotextiles.	Tensile strength is an important property in the ELCOROCK® system. A high tensile strength indicates that the textile will be able to perform under tension, for example, when filled with sand.
Abrasion Resistance	Measurement of retained tensile strength after standardised abrasion from angular stones.	When installed Elcorock will be exposed to harsh marine conditions including continuous wave action and sand abrasion. High results in this test indicate that a textile can withstand these tough conditions while retaining strength.
Seam Strength	Pure tension test of a sewn seam.	Seams are an integral element of Geotextile Sand Containers. A high seam strength ensures a combined performance between seam and material preventing disconnect of the container material panels.
Abraded Seam Strength	This test reflects the combined thread, geotextile and their interaction after exposure to aggressive abrasion conditions.	Repetitive movement of sand and other objects along a seam particularly in a coastal environment can cause abrasion to the seam thread. A high recorded strength is imperative with this test.
Hydrocarbon (Diesel) Resistance	Hydrocarbons are common in marine environments, predominantly around boat ramps and jetties.	These chemicals can be detrimental to the life of some geotextiles resulting in shorter lifespan of a structure.
Accelerated UV Resistance	Material failure caused by UV degradation is common when the material is not UV stabilised.	UV degradation is one of the most important considerations when it comes to survivability of any geosynthetic sand container. A proven history of Accelerated UV testing along with real life performance results is imperative.
Pore Size O95 - Sieve Method	Precise measurement of fine pore sizes common to heavy weight non-woven geotextiles.	The ability for the geotextile to allow water to pass through without the loss of sand is imperative with Geosynthetic Sand Container material. Sand escaping from the container will eventually cause deflation of the container. It is desirable that the geotextile does not restrict the flow of water or cause pressure build up.
Permittivity	A standard hydraulic measurement of the geotextile	
Coefficient of Permeability	A standard measurement of the intrinsic permeability of the geotextile material	
Flow Rate @ 100mm Head	A standard measurement of fluid flow through the geotextile	

TECHNICAL SUPPORT

As Australasia's geosynthetic specialists, Geofabrics is able to provide additional support services to ensure the best product solution is offered on every project.

We leverage the expertise of our internal resources, including professional engineers who are specialists in their fields, to provide detailed design suggestions for your project. Our design suggestions can help fast-track your design process, provide another technical viewpoint and reduce construction costs while delivering value over the life of your project through innovative use of geosynthetics as a solution.

Our team also offer generic standard specifications and drawings to enable designers to complete project documentation faster and reduce the risk of error in the documentation.

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