bidim® C

Conductive Geotextile for Leak Detection

SMARTER
INFRASTRUCTURE
STRONGER
AUSTRALIA

GENERAL & TECHNICAL DATA

GEOFABRICS®
Smarter Infrastructure

www.geofabrics.co

The bidim® C has been designed to allow installation of geomembrane lined ponds to undertake liner integrity surveys across 100% of the liner surface. It enables leak detection surveys to be carried out using an Electrical Leak Location technique known as Arc testing. Thus providing reliable leak detection of liner pin holes down to 0.2mm in diameter.

Why bidim® C?

Using bidim® C mitigates the need for water in surveys, as a circuit can be completed without using water and/or relying on a wet subgrade.

This technology is particularly efficient in dual lining applications when installed below the primary liner.

bidim® C nonwoven geotextiles are manufactured in Australia to ISO 9001 standards and available in rolls up to 3m wide. They also provide excellent filtration or can perform as a cushion to the subgrade and feature a strong three-dimensional structure with high elongation. bidim® C nonwoven geotextiles also have a high melting point and high UV resistance.

How does bidim® C work?

Graphene, a two-dimensional sheet of carbon atoms, is the lightest, strongest, most electrically conductive substance yet discovered.

Graphene is regarded as the “wonder material” of our time because of its unique and exceptional properties including:

- Thinnest known material
- Largest surface area to volume ratio
- Most stretchable crystal
- Record thermal conductivity
- Transparent
- Impermeable to all gases except water vapour.

How is bidim® C Installed?

The technology built into bidim® C only requires overlap of the geotextile to deliver the conductivity required for pin hole detection in a membrane layer above using standard liner integrity survey equipment.

Although no welding is required, welding may be preferred in windy conditions and is as simple as lighting heat bonding. The geotextile also does not contain any wires - meaning installation does not require special skills or equipment. Just roll it out with approximately 100 mm overlap joins on all edges.

Spark or arc testing can be conducted to ASTM D7953 at as low as 1kV.

Technical Data

Parameter	Test Standard	Units	Test Direction	Value			Test Frequency
				A19C	A34C	A64C	
Index Tests							
Wide Strip Tensile Strength	AS 3706.2	kN/m	MD	14.0	21.5	42.0	Every 17,600m^2
			XMD	14.0	21.0	42.0	
Wide Strip Toughness	AS 3706.2	kJ/m^2	MD	3.2	5.2	12.3	
			XMD	3.7	5.7	12.6	
Grab Tensile Strength	AS 3706.2	N	MD	920	1,430	3,010	
			XMD	920	1,400	3,010	
Trapezoidal Tear Strength	AS 3706.3	N	MD	370	540	1,030	
			XMD	370	540	1,030	
CBR Burst Strength	AS 3706.4	N	-	2,400	3,700	6,950	
Pore Size	AS 3706.7	µm	-	<75	<75	<75	Quarterly
Flow Rate @ 100mm Head	AS 3706.9	l/m^2/s	-	175	155	80	
Performance Tests							
Peak Interface Friction Angle (δ)*	ASTM D5321	°	Smooth HDPE	13 - 15			As Required
			Textured HDPE	27 - 29			
Surface Resistivity ‡	ASTM D4496	Ω/sq	-	<15,000			Every 1,000m^2 †

Notes:

*: Interface friction analysis was carried out in a large-scale direct shear box with both interfaces completely submerged and loaded for 15 minutes prior to shearing. A load between 10-500kPa was used at a test speed of 1mm/min. The reported friction angles were determined from a best-fit linear regression line drawn through the test data across the noted load. Caution should be exercised in using these values for applications involving normal stresses outside of the stresses covered by the test series or in isolation of site specific conditions and geotechnical investigations. Results may vary across different loads, geosynthetic material types and testing facilities. These values should always be verified by actual interface friction analysis using project-specific materials/conditions.

†: Initial testing will be every 1,000 m^2, however this testing frequency may decrease or may be replaced by continuous testing.

‡: A lower surface resistivity value indicates higher conductivity

The data and specifications contained in this table are obtained from the manufacturer's laboratory testing. To ensure this information is current please contact your local branch of Geofabrics Australasia.

Please note: The Grab Tensile Strength test standard AS 3706.2 is equivalent to AS 2001.2.3b.

All index testing has been carried out by a NATA accredited laboratory and copies of test certificates are available on request.

The product properties listed in the above table are typical values.

Quality & Traceability

The base product used in bidim® C is manufactured under management systems that comply with Australian and International Quality Standards and are ISO 9001 quality assured.

We operate two quality assured testing facilities in Australia and products are tested frequently and transparently.

Our products have traceability from the test results to the roll number and production batch, providing confidence in the quality and consistency of our products in accordance with our latest published specifications.

Our commitment to world class quality provides our clients with the confidence that the product delivered is as per their project specifications, ensuring performance and life-cycle costs are optimised.

Smart Materials

Graphene technology allows the development of sensing systems and algorithms that are able to draw data from conductive materials, making them smart. This technology will allow detection and real time reporting of changes in strain, pressure, temperature and moisture across any number of infrastructure applications. Smart materials are also spatially aware, able to locate where readings are coming from.

What is Graphene?

Graphene, a two-dimensional sheet of carbon atoms.

It is the lightest, strongest, most electrically conductive substance yet discovered.

Technical Leadership

As the Australasian leader in geotextiles and geosynthetics, we pride ourselves on our reputation for supplying world-class technical leadership and engineering support through our innovation, research, industry education, design and independent testing services.

Geofabrics centre for Geosynthetic Research, Innovation and Development (GRID)

The GRID is a specialist R&D laboratory that works with clients to develop the right geosynthetic solution for their complex problems.

Based in southern Queensland the GRID houses a selection of key geosynthetic-specific test equipment. Testing is aimed at solving the real world problems that designers, contractors and asset owners find on their site – a major step forward to ensure the right solution is adopted.

The GRID is committed to precision analysis and comprehensive reporting. Analysis is performed according to Australian and American test methods and comprehensive test reports are generated, including results, photos, graphs, test conditions and details of the apparatus used.

Geosynthetic Testing Services

Geosynthetic Testing Services is a commercial testing laboratory that specialises in the testing of geosynthetics. It is widely used by clients to ensure they are meeting their Construction Quality Assurance obligations.

Geosynthetic Testing Services is a fully independent, confidential, NATA registered laboratory based in Albury. With quick turnaround times and competitive rates, Geosynthetic Testing Services supports the infrastructure industry in Australia.

Central Design Hub

Geofabrics Central Design Hub can provide our clients with specification reviews, design suggestions and certified designs for geosynthetic applications.

FOR MORE INFORMATION

GEOFABRICS.CO/PRODUCTS/ BIDIM-C-RANGE

GEOFABRICS.CO

AU 1300 60 60 20
NZ 0800 60 60 20

AUSTRALIA

MELBOURNE
(03) 8586 9111

SYDNEY
(02) 8785 8800

COFFS HARBOUR
(02) 6653 5706

NEWCASTLE
(02) 4951 2688

HOBART
(03) 6273 0511

ADELAIDE
(08) 8219 2900

DARWIN
(08) 8219 2900

PERTH
(08) 9406 5900

BRISBANE
(07) 3713 4600

BUNDABERG
(07) 4155 9968

GOLD COAST
(07) 5594 8600

TOWNSVILLE
(07) 4417 6500

NEW ZEALAND

AUCKLAND
(64 9) 634 6495

CHRISTCHURCH
(64 3) 349 5600

SILVERDALE
0800 60 60 20

MAR.AU.BIDIMC.GENERALBROCHURE&TDC.03.2021

GEOFABRICS®
Smarter Infrastructure

FOLLOW US