



GEOFABRICS CASE STUDY



BIDIM C LINING SYSTEM SECURES WATER STORAGE IN SOUTH AUSTRALIA

PRODUCTS USED

Bidim® C Conductive Non-Woven Geotextile

- A strong three-dimensional structure with high elongation, providing excellent filtration and acts as a cushion to subgrade
- Effective and economical leak detection surveys for geomembrane lining systems using Arc testing for holes and defects as small as 0.2mm
- Durable with a high melting point and high UV resistance due to Bidim polyester properties
- Easy installation with no heavy machinery, equipment or special skills required

PROJECT DESCRIPTION

In 2018, SA Water's Morgan Water Treatment Plant underwent a \$15 million upgrade to help meet future demand and further enhance the quality of drinking water supplied to more than 130,000 regional South Australians.

The upgrade included the construction of a 30 million litres of water capacity earth bank dam with the civil earthworks and construction carried out by Leed Engineering. Geotest was engaged as the lining contractor to install the various layers within the dam liner as well as test for any leaks within the sealed Oasis® Floating Cover Geomembrane.

Geofabrics was chosen as the supplier of choice due to their proven quality and assurance, product durability and their reliability of supply across their broad product range.

OUR SOLUTION

The liner system comprised a series of Geofabrics supplied products. The M5 Flownet Drainage Geocomposite was chosen as a drainage blanket to enable any leakage or sub liner flows to be channelled towards the dam's subsurface sump and gravity disposal pipe. The cushion layer, A64 Bidim® Green was installed due to its proven capability as a heavy cushion geotextile. Geofabrics' Centre for Geosynthetic Research, Innovation and Development (GRID) has proven through extensive testing that Bidim Green A64 is ideal for cushioning liners in applications such as this one.

Bidim C conductive non-woven geotextile was utilised to enable real time quality assurance testing for existing holes within the liner or welded joins. The process of spark testing detects pin holes not visible to the naked eye, Bidim C improves this process as it is 100 times more conductive and effective than methods which comprised of wetting the subgrade. Relying on an evenly wetted subgrade for conductivity and sparc testing can be difficult and should not be relied upon to ensure a current is evenly distributed below the liner. Bidim C makes this process simple, effective, quick and safe.

30ML

dam constructed with
geosynthetic lining

Supplying water to

130,000

regional homes

The Oasis liner and floating cover consists of an Ethylene Interpolymer Alloy (EIA). It was chosen due to its 30-year design life, its unrivalled chlorine resistance and ability to be stored for extensive periods, unlike its counterpart CSPE which has a specified shelf life. Furthermore, the installer confirmed it is extremely easy to weld and “looked great”, being tan in colour.

Geotest installed all the products without any complications and were extremely pleased with their first use of the Oasis floating cover as it will help protect the quality of the water in the treatment plants from high concentrations of chlorine. The head contractor, Leed Engineering, also expressed their appreciation to Geofabrics for supplying a product that was simple to install.

The storage pond is now commissioned and in use, supplying 130,000 regional homes with safe, clean drinking water for at least the next 30 years.



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