



Bituminous geomembrane Teranap TP 531 in the Morwell Main Drain Rehabilitation Project

The Morwell Main Drain (MMD) was constructed in the 1950's and part of it was re-aligned in the 1970's. The drain collects run-off from parts of Morwell and industrial areas north-east of the mine, the Princes Freeway and a small amount of run-off from the Hazelwood Mine.

After a heavy rainfall in 2011 ground movements were experienced in the northern wall of the Hazelwood Mine which is located in Morwell Victoria. As a result, cracks appeared on the surface of the Princes Freeway and adjacent areas, requiring the temporary closure of the freeway.

The Department of Primary Industries Victoria and geotechnical experts conducted an investigation into the incident led to remedial works required to ensure that the area was stabilised to ensure public safety and ultimately for the freeway to be re-opened. This included remediation works to the 1,8 km earthen channel containing dispersive soils, known as Morwell Main Drain (MMD).

The plan of action was, to reline 1,2 km of the earthen drain with non-dispersive clays and revegetated while the most critical section of 600 lm would need to be lined with an impervious membrane. The impervious liner would need to:

- Provide a 50 yr service life;
- Survive exposed for most of its service;
- Be flexible enough to take minor settlements while remaining watertight over its service life;
- Able to be easily maintained;
- Be cost effective.

The lining system composed of 3 components:

- 23.000 m2 of Mirafi GX 130/130 biaxial geogrid to support liner in case of sinkholes;
- 1m wide [Verecran](#) heat shield fabric underneath Teranap laps to protect geogrid;
- 23.000 m2 [Teranap TP 531](#), a 4,8 mm thick heavy duty geomembrane.

Aeramix technicians were properly trained to install the Teranap according to Siplast recommendations. Teranap was easily fully bonded directly to all concrete structures to make a watertight structural seal using Siplast primer and then torching. Ends were finished using termination bars.

OTHER PRESTIGIOUS TERANAP REFERENCES:



**Natural sewage treatment
station in Ghardaia - Algeria**



**Water storage pond at
Loughtondale in Australia**



Project information

Project Reference: ADNOC
New Corporate
Headquarters
Client: GDF Suez Australia
Earthworks: RTL Mining and
Earthworks
Designer: BMT WBM, Sydney
Geomembrane installer:
Aeramix, Melbourne
**Independent Geomembrane
QA:** GeoBDM, Sydney

Siplast Icopal Products:
Teranap TP 531, Verecran

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