



REHABILITATION OF ROADWAY EMBANKMENT

NATURE OF INTERVENTION

Roadway embankments require ongoing servicing and maintenance in respect of many aspects. Over the long term, such interventions can amount to more comprehensive rehabilitations.

In this instance an unacceptable level of contamination had been detected in the existing embankment which required urgent address, over an above servicing of the vegetative upper layer to avoid excessive erosion and washout.

As such a complex composite liner system was designed which aimed to provide for number of functions, over and above the containment of the contamination alone. The designs took account of rainwater collection systems and the adequate failsafe monitoring thereof, as well as the proper and adequate interaction of the various layers within the liner system to ensure overall stability and effectiveness.

Through the introduction of various Geosynthetics products, to replace conventional construction materials, durability, cost and performance of composite liner systems was greatly improved leading to lower maintenance requirements and improved efficiencies over the new extended design and operational lifespan.

Location:

Modderfontein, Gauteng, South Africa

Products:

- *HDD 10 85 12F – Drainage geocomposite*
- *X-GRID PET-PVC-0 200/20 - Geogrid*
- *TeMa-CELL HD20B-200 - Geocell*
- *TeMa-TEX NW10 – Nonwoven geotextile*

Quantity:

6 500 sqm footprint

Application:

- *Slope drainage*
- *Veneer reinforcement*
- *Erosion control*
- *Liner protection*

Date:

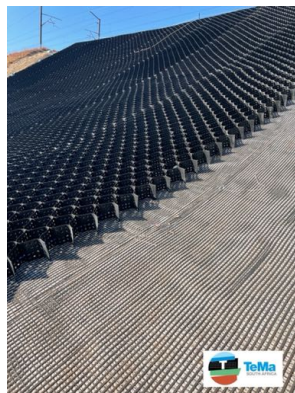
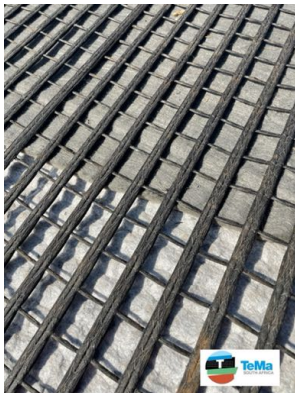
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SOLUTION

TemaTEX NW10 (100gsm nonwoven geotextile) was installed on the regraded steep side slope as a geomembrane liner protection layer. The **HDD 10 85 12F** (12mm Studded HDPE drainage core with boned geotextile) geocomposite was then placed above the geomembrane liner to collect new rainwater volumes and drain them away from the structure and prevent further ingress into the embankment.

Finally the **TeMa-CELL HD20B-200** (200mm high, HDPE Geocells) were placed along the area. This was underlain by the **X-GRID PET-PVC-0 200/20** in order to provide veneer reinforcement stability to the layer down the steep side slopes.

Lastly the cells were filled with topsoil and grassed and stormwater control structures fitted.



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