



**TeMa**  
Technologies  
and Materials

South Africa



## LEAKAGE DETECTION & LINER PROTECTION LAYER

### NATURE OF INTERVENTION

Leakage detection within the geomembrane liner of Pollution Control Dams (PCD) or Return Water Dams (RWD) for large tailings storage facilities (TSF) is extremely important and forms a significant element of their water use licenses. Liquid contents are high toxic and contaminated in nature and are required to be contained. Any leakage in the barrier system is to be quickly detected and dealt with before posing a threat and reaching the external natural environment.

Similarly, subsoil drainage and control is equally important to ensure these new facilities remain operational at optimum levels. Geotextiles are used to filter liquid from the in-situ material.

The greater TSF basin is now required to be lined with geomembrane material. Protection of this layer is vital and needs to be ensured from any threats arising by the in-suit material beneath as well as imported drainage networks above. Thicker geotextiles provide an optimal level of protection while still allowing the installation of drainage in close contact with the liner.

### Location:

Stilfontein, South Africa

### Products:

- MD 4 50 cuspatated sheet
- TemaTEX NW6 nonwoven geotextile
- TemaTEX NW8 nonwoven geotextile

### Quantity:

- MD 4 50: 300 000sqm
- TemaTEX NW6: 368 100sqm
- TemaTEX NW8: 885 000sqm

### Application:

Leakage detection, Filtration, Protection

### Date:

August, 2023

## SOLUTION

**MD 4 50** cusped drainage core was incorporated between the primary and secondary liner of the Return Water Dam complex as a leakage detection layer. The layer drained to monitoring manholes form where any leaks could be monitored, isolated and repaired.

**TemaTEX NW6** was used in the subsoil drains as a filtration barrier separating contaminated groundwater to be drained from the area.

**TemaTEX NW8** was used as a liner protection layer against damage to the underlying geomembrane.



**TeMa** South Africa (Pty) Ltd

241 Joseph Road, Tunney Industrial, Germiston 1429  
Tel: +27 (0) 72 873 0101  
Email: [temaSA@temacorporation.com](mailto:temaSA@temacorporation.com)

Web site: [www.temaSouthAfrica.com](http://www.temaSouthAfrica.com)

**TeMa** Technologies and Materials srl

via dell'Industria 21 – 31029, Vittorio Veneto (TV), ITALY  
Tel: +39 0438 5031  
Email: [info@temacorporation.com](mailto:info@temacorporation.com)

Web site: [www.temageo.com](http://www.temageo.com)