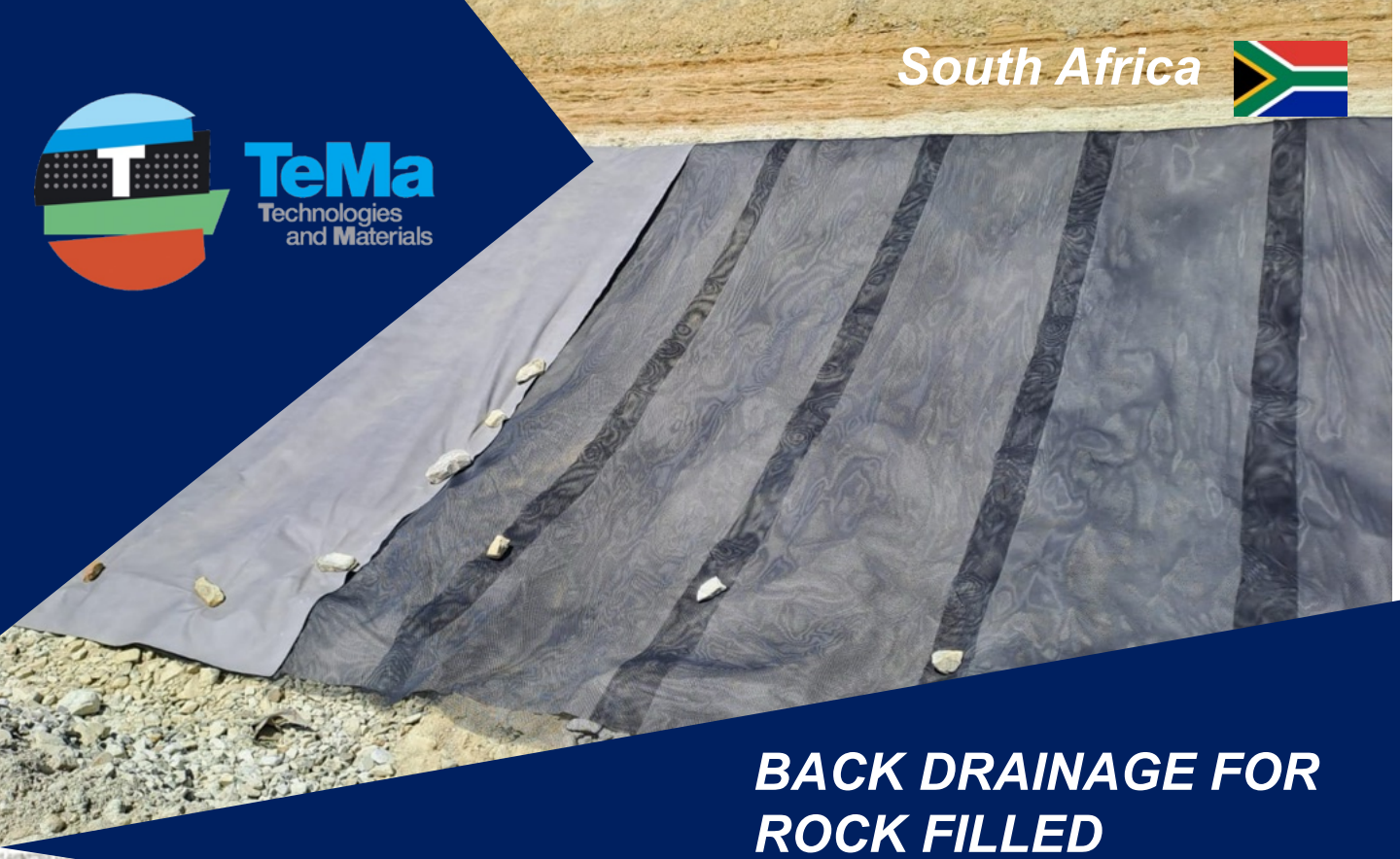
South Africa



BACK DRAINAGE FOR ROCK FILLED STABILITY BUTTRESS

NATURE OF INTERVENTION

Tailings Storage Facilities (TSFs) often require stability interventions. One such method is through the placement of a rock buttress against the existing side slopes of the facility to prevent sloughing and potential risks of side slope deterioration. Such interventions allow the operation of TSF to continue and consequently the associated mine operations to remain unhindered.

Careful consideration needs to be applied to the interface of the side slope and buttress due to the significant difference in material and void ratios. The much finer tailings material is to be retained and prevented from penetrating the free-flowing voids between the larger rock particles.

At the same time, a mechanism needs to be provided whereby any liquid leaching from the TSF or any external rainwater entering the buttress is intercepted, collected and removed before contamination and/or additional stability issues are a caused.

During installation the drainage core must also be protected from the threat of drop-placing the heavier rocks forming the eventual buttress.

Location:
Free State, South Africa

Products:
- *T-DRAIN 500 geonet*
- *TemaTEX NW25(PP)* nonwoven geotextile
- *TemaTEX NW55((PP)* nonwoven geotextile

Quantity:
- *T-DRAIN 500:* 60 550sqm
- *TemaTEX NW25(PP):* 61 140sqm
- *TemaTEX NW55(PP)*: 60 880sqm

Application:
Drainage, Filtration, Protection

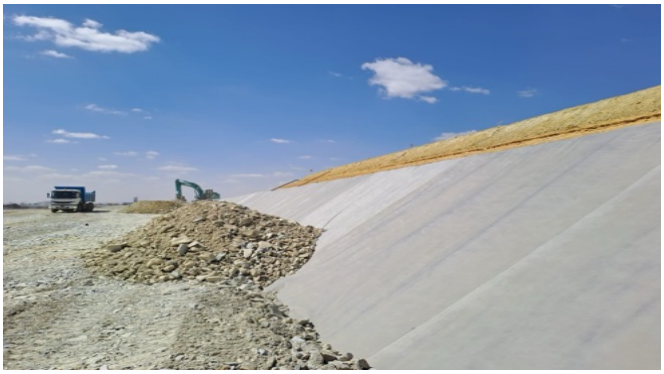
Date:
August, 2024

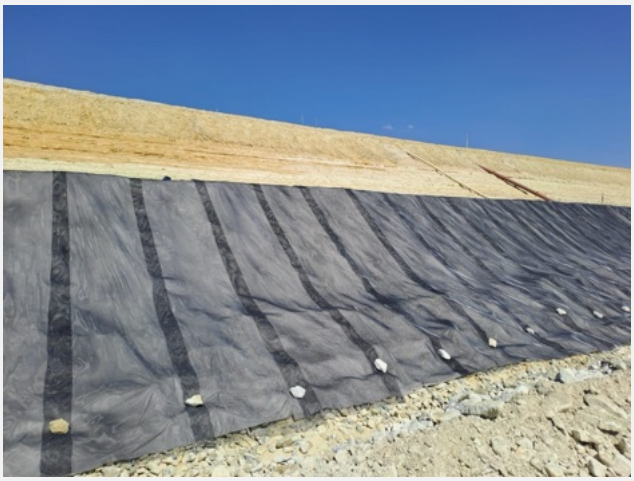
SOLUTION

TemaTEX NW25(PP) was used as a filtration layer over the existing TSF allowing any leached liquid to enter the overlying drainage layer.

T-DRAIN 500 geonet formed the drainage core. The layer collected liquids from beneath and above and transferred it to toe drains to be removed from the system.

TemaTEX NW55(PP) was then used as a filtration and protection layer above the drainage core allowing liquid to pass but providing protection during rock placement.





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