



Overall view of the mine



Detail of excavation to mine entrance

## “Terrafix 120” – slope protection for mining project

ReMaCon Products cc, a licensee for Terraforce in Gauteng, recently supplied over 2200 m<sup>2</sup> of “Terrafix 120” erosion control blocks to LET Construction (Pty) Ltd for the “Total Coal Forzando Project” near Bethal in Mpumalanga.

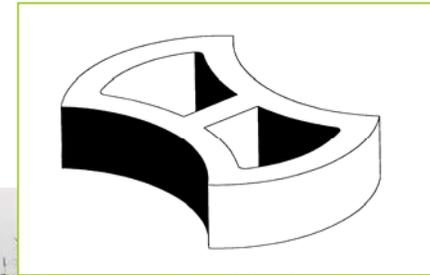
A ‘box cut’ incline shaft for coal mining access was excavated. A total volume of 270 000 m<sup>3</sup> of soil and rock were removed to a maximum depth of 39m at the underground coal mine entrance. This is the second largest incline ‘box cut’ operation undertaken in South Africa by LET Construction.

The underlying 132 000 m<sup>3</sup> of sandstone was blasted and the steep sides gunited to stabilise them. The soft soil above consisted of red clay with an overlay of black turf, which was cut to 45<sup>0</sup> sloping down to 30<sup>0</sup> and required protection against erosion by running water.

The consulting engineers, TWP (Townsend, van der Walt & Partners), decided to use the Terrafix 120 due to its cost efficiency when compared with the gunite option.

Furthermore, Terrafix 120 was quick and easy to place using unskilled labour. Topsoil collected on the site originally contained enough grass seeds including sorghum grain to ensure a dense, green vegetation cover coupled with a strong, earth reinforcing root system.

The recent heavy rains, over 1000mm between January and March, exceeded the annual average



Grass and Sorghum grain on Terrafix units

rainfall for the area, and had no effect on the stability of the slopes.

In this instance the blocks were packed in the densest pattern of 10 blocks per sq.m., a pattern that has shown in the past that it can perform above industry standards.

The contract with a total value of R27 million, commenced 17<sup>th</sup> July 2005 and is due for completion End April 2006.

### More on Terrafix

Terrafix is an interlocking, environmentally acceptable element, made of high strength concrete and therefore can be safely used in most saline, acid or polluted conditions.

It is specifically designed to provide a flexible lining where cost effective protection against wind and water erosion is required.

The units are available in three different thicknesses, 100mm, 120mm and 150mm, and can be laid in a variety of configurations, ranging from four blocks to ten blocks per square metre, to suit most site conditions,

They are permeable, but can be made impermeable by either placing an impervious membrane underneath the blocks or by grouting the structure with concrete or mastic.

### Applications

**Water courses and lakes:** use to line river banks,

channels, weirs, spillways and dams.

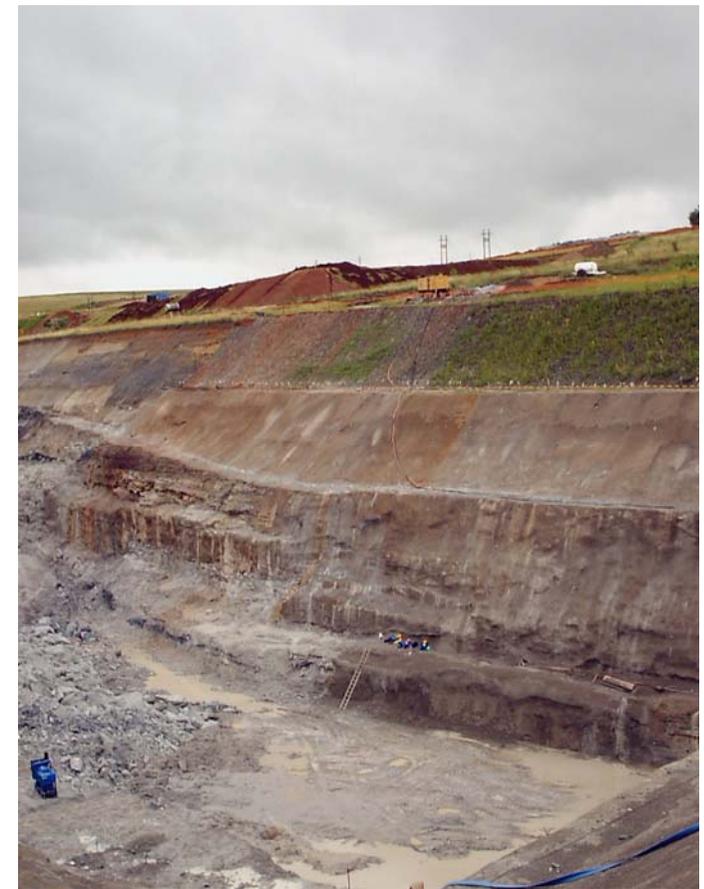
**Roads and railways:** use for bridge abutments, embankments, cuttings, stormwater control, pipe in and outlets.

**Marine and mining works:** use for estuarine protection, sand dune stabilisation and embankment stabilisation.

### The bottom line

Soil erosion is a serious escalating problem worldwide that has to be addressed urgently and decisively if more serious damage to our land is to be averted.

In that attempt, Terrafix offers one of the most cost effective and speedy erosion control methods and provides a perfect regime for establishing vegetation, which in turn improves stability.



Terrafix protected slope above gunited rockface

