



SLOPE STABILISATION

near Loskopdam

Work on the slope stabilisation near Loskopdam started as early as September 2015 and was completed earlier this year. Infrastructure engineers, HHO Africa, recommended a draping mesh of 2,7 mm diameter hot-dip galvanised hexagonal woven double-twisted wire mesh with 80 mm x 100 mm mesh opening or equivalent high-tensile steel mesh.



Contractors Guncrete (currently Guncrete Geotechnical), opted to use Geobruigg's Deltax G80/2 mesh. Deltax mesh has lower installation cost as compared to commercially available double twisted mesh. At only 76 kg per 117 m² roll of mesh (hexagonal mesh is more or less 164 kg for the same size), the mesh rolls can be handled by hand with only a few workers.

A total of over 8 000 m² of mesh was used in Cut 7 alone. Easy extension of rolls by means of connection clips avoided waste material. The connection clips allows optimal force transmission and there is no overlap of mesh. Compared to conventional protection methods, Geobruigg's systems use the highest strength-to-weight ratio possible to create solutions that are guaranteed to be exceptionally stable and visually appealing. Salt-spray tests have also shown that the Zinc/Aluminium coating on Geobruigg mesh shows a 2-3 times longer lifespan than normal galfan coatings.

The contractor on site, KPMM made sure that the work was done as per the design specifications. After barring down the face, the mesh and dowels (25 mm, length 1 200 mm) were installed in areas where the ground was fractured, or there were infilled joints and steep gradient. →



→ A second set of mesh, Tecco G65/2 was used over the Deltax mesh and longer dowels were used. Anchoring is a critical part of the slope stabilisation system and care should be taken that the downs are correctly installed and grouted. The length of the dowels should be sufficient so that nuts can be tensioned at 30 kN onto the baseplate. If this is not achievable one could consider increasing the length of the dowels. A staggered nail pattern (2 m x 2,5 m recommended) will also reduce the chances of boulders/rocks to slide behind the mesh over the total length of the slope.

Cut 5, 6 and 8 showed signs of possible erosion that might be a cause of concern in future. It was recommended that some sort of erosion control mat be used and possible hydroseeding to cover the slope and protect it from erosion. Initial recommendation for the area had been a rockfall barrier. Instead, the mesh draping was put on the slope and a concrete wall was built at the road side to stop falling rocks from getting onto the road. ●



Scope of work

Rehabilitation of national route N11, section 10 going from Middelburg towards Groblersdal near Loskopdam (km 23,5 to 53,4). Cut 5, 6, 7 and 8.

