



KAYTECH CASE STUDY

KAYBION® SOLUTION FOR EROSION CONTROL AT ROAD K46

GEOSYNTHETICS USED

Kaybion® Baskets and Mattresses:
Woven wire mesh containers
manufactured from zinc coated steel
wire, with or without an additional
PVC coating.

bidim® A4: Continuous filament
geotextile used to prevent soil
migration while allowing drainage.



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PROJECT DESCRIPTION

The Road K46 Phase 2 (P79/1) project in Diepsloot, South Africa, involved the upgrading of roads and interchanges to enhance infrastructure in the area. One of the key challenges of the project was the construction of slopes and embankments that needed to be properly retained to prevent erosion and structural failure. In addition to addressing the technical demands of the project, there was a strong focus on empowering the local community by using a labour-intensive RT approach to the construction process.

A BETTER SOLUTION

To address the erosion control challenges of the project, Kaytech's Kaybion® baskets and mattresses were selected for their proven performance. Kaybions are woven wire mesh containers made from zinc-coated steel wire, with or without an additional PVC coating. These units are delivered in bundles, ready to be assembled and filled with rock on-site. The resulting modular units interlace into permeable, flexible structures that provide an environmentally friendly and visually appealing solution.

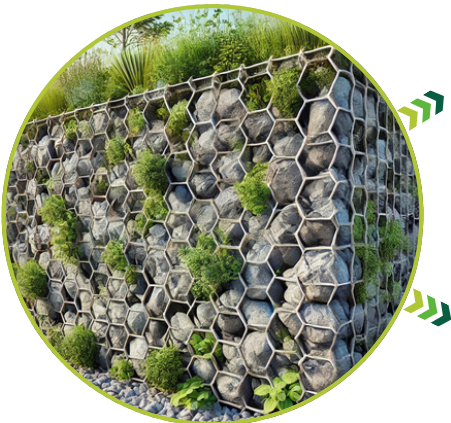
For this project, Kaytech supplied Kaybion® units in sizes of 2x1x1m and 1.5x1x1m, with all units zinc-coated for increased durability and resistance to corrosion. bidim® A4 was utilised as a filtration geotextile behind the Kaybion® units, facilitating effective drainage while preventing soil migration and maintaining long-term structural stability.

These Kaybion® walls provided a cost-effective and sustainable alternative to traditional concrete retaining walls. Their modular design enabled quicker installation with minimal machinery, reducing both environmental impact and costs. Designed to effectively control erosion and protect culverts from scour, the walls stabilised the surrounding soil and helped prevent long-term structural issues.

As part of the project's focus on community development, Kaytech, in conjunction with the main contractor, Slim B&D Construction, worked closely with five Small, Medium, and Micro Enterprises (SMMEs), providing training and support to enable the teams to install Kaybion® walls ranging from 2m to 6m in height. Over 1000 cubic meters of Kaybion® units were successfully installed, creating local employment opportunities and supporting enterprise development. The project not only addressed the critical need for effective slope retention but also promoted the growth of local businesses.



Interesting facts



Environmentally Friendly

Kaybion® structures have a lower carbon footprint than traditional methods like reinforced concrete, thanks to natural materials and minimal processing—making them a sustainable choice.



Highly Permeable and Durable

The rock fill allows water flow, preventing soil erosion and managing seepage. Galvanized or PVC-coated steel wires ensure long-lasting durability, even in harsh conditions.