



KAYTECH CASE STUDY

VEGETATION ESTABLISHMENT USING EROSION CONTROL MATTING ON MINE BERMS AT A PLATINUM MINE

GEOSYNTHETICS USED

Enviromat®: A biodegradable erosion control mat manufactured from natural fibres formed into an open matrix structure.

Enviromat®: Installed over hydroseeded berm slopes to provide temporary surface stabilisation and protect the soil during vegetation establishment.



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PROJECT DESCRIPTION

Newly constructed berms at a platinum mine required vegetation to be established to limit surface erosion and stabilise the exposed soil slopes. However, early-stage vegetation establishment is particularly vulnerable to rainfall and runoff, which can displace seeds and wash away fine soil particles before plant roots develop. Without protection, these conditions can leave berm surfaces exposed, increasing the risk of continued soil loss and delaying the formation of stable vegetative cover.

A BETTER SOLUTION

Erosion control blankets are widely used to stabilise exposed slopes during the early stages of vegetation establishment. These systems function by protecting the soil surface from rainfall impact while reducing the velocity of shallow surface runoff. The mat structure helps maintain contact between the seed layer and the soil, preventing displacement during rainfall events. According to erosion control research, surface protection systems can significantly reduce soil loss on disturbed slopes by limiting particle detachment and sediment transport (Rickson, 2006).

Following hydroseeding of the berm surfaces, Enviromat® biodegradable erosion control mats were installed across the slopes. The matting was placed directly over the seeded soil and secured with wooden pegs to ensure continuous contact with the ground surface. Maintaining close contact between the mat and the soil is critical, as it prevents runoff from flowing beneath the mat and displacing soil particles.

The open matrix structure of the matting dissipates rainfall energy and traps soil particles while allowing vegetation to grow through the material. As plant roots develop, they progressively reinforce the soil structure. Once vegetation is established, the biodegradable matting gradually decomposes, leaving a naturally stabilised slope.

The erosion control system provided immediate protection to the berm surfaces while vegetation established. By reducing soil displacement and seed loss during rainfall events, the matting improved the likelihood of uniform plant growth across the slopes.

As vegetation developed, root systems progressively stabilised the soil and reduced the risk of further erosion. The biodegradable matting gradually decomposes after vegetation becomes established, eliminating the need for removal while supporting long-term slope stabilisation.



Enviromat® anchored to maintain contact with the soil surface.



Enviromat® secured to the berm surface using wooden pegs.



Vegetation emerging through the installed Enviromat®.

Did you know?



Raindrop Impact

Raindrop impact can detach soil particles on exposed slopes, initiating erosion before runoff even begins.



Critical Germination Period

The first few weeks after seeding are the most vulnerable period for erosion, before plant roots can stabilise the soil.



Short-Term Surface Protection

Biodegradable erosion control mats provide short-term protection until vegetation establishes natural soil reinforcement.