

Erosion Control

Steep Rail Cutting, Erosamat & Erosaweb, HS1, Boxley, Kent, UK



Case Study

Project Description

The HS1 High Speed Line, formerly known as the Channel Tunnel Rail Link, passes through a range of terrains. At one point the track passes over the mid Kent downs. In order to provide the required track level when the route was constructed, steep cuttings, some 350m long and up to 12m deep, were excavated through the chalk.

The Challenge

The cuttings were dug into structurally sound chalk with slope angles that ranged between 45° and 50°. Since the natural steep slope of the chalky face was unable to support any plant growth, the cuttings would have presented a stark and unacceptably barren appearance along the line. The planning consent for the CTRL was dependant on minimum impact on the unique Kent chalk land ecosystem. It was essential that the contractor created an environment that would give rise to the establishment of vegetation over the chalk face.

The Solution

The contractor opted to use **ABG Erosaweb** to hold a topsoil cover in place on a steep chalk face and **ABG Erosamat** for slope protection and root zone reinforcement on the surface of the less steep cuttings between 30° and 40°.

The **Erosaweb** honeycomb soil confinement system was laid on top of the steep chalk face and secured with mild steel J pins into the chalk. The contractor drilled holes prior to fixing.

The cells of the **Erosaweb** that hold the topsoil in place on the steep chalk face provide sufficient soil containment to support good moisture retention for the roots of vegetation, thus maintaining grass cover even during dry periods.

Project Information

Client	Union Railways
Contractor	Norwest Holst/Hochtief JV
Consultant	RLE Ltd
Products	Erosamat Type 3, Erosaweb
Quantity	6000m ² , 3200m ² respectively
Benefits	<ul style="list-style-type: none">• Holds soil on steep slope over poor ground• Promotes germination• Minimise environmental impact• Green finish encouraging local flora and fauna



ABG Erosamat (upper slope 30°-40°)



ABG Erosaweb (lower slope 50°)

Erosion Control

Steep Rail Cutting, Erosamat & Erosaweb, HS1, Boxley, Kent, UK

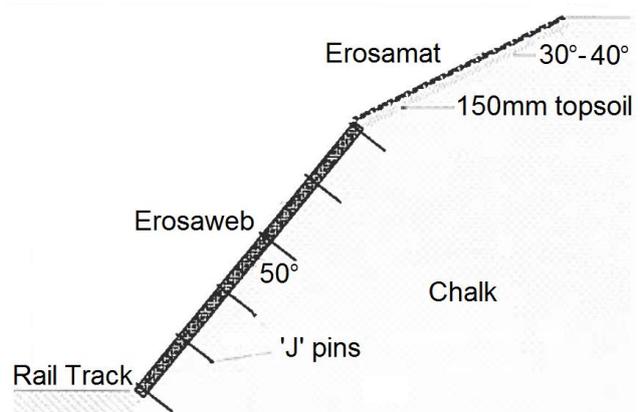


Erosamat's three-dimensional open matrix was utilised to protect the less steep upper slopes from erosion and to provide permanent root zone reinforcement for the vegetation. 150mm of topsoil was placed on the chalk with the 20mm thick **Erosamat** pinned on top. The topsoil was hydro seeded with a drought resistant seed mixture.

Even before the tracks were laid, an excellent cover of grass had established over the face of the chalk. The natural regeneration of the wildlife ecosystem on the slopes will play its part in helping to reduce any adverse environmental impact of the cuttings.

The ABG Service

ABG offered a design and installation advice on the optimum pinning centres for the given slope with advice on filling sequence of cells and final hydro seeding.



Upper slope (30°-40°) with 150mm topsoil covered by 20mm thick Erosamat. Holes drilled into the stiff chalk at the design centres across both slopes to receive the pins.



Steep, dry, barren chalk face covered with Erosaweb held with "J" pins ready to receive 150mm topsoil



Natural flora and Fauna supported making minimum environmental impact on the chalk grassland

Contact ABG today to discuss your project specific requirements and discover how ABG past experience and innovative products can help on your project.