

Erosion Control

Reinforced Flood Embankment, Erosamat, Whittlesey, UK



Project Description

Whittlesey Washes Flood Defence System stores up to 35,000,000m³ of water on an area surrounded by embankments when high tides and high river levels coincide. The stored flood water is then released back into the river as the tide recedes.

Under the 1975 Reservoirs Act, inspections in 2012 identified an essential requirement for remedial works to reduce the risk of a breach in the embankments during an extreme flood event. Flooding in both 2013 and 2014 resulted in noticeable seepage on the South Barrier Bank raising concerns over the integrity of the embankment during a flood event.

The Challenge

The project was implemented by the Environment Agency with support from local Internal Drainage Boards, Natural England and the RSPB. The area is unique with this long embankment and many environmental designations. A solution was sought to safeguard the site for the next 100 years, but, as a Site of Specific Scientific Interest (SSSI) and a Ramsar Site (a wetland of international importance), environmental considerations and biodiversity implications were of paramount importance.

After site investigation and flood modelling it was not considered necessary to increase the overall height of the embankment. However, the weaker areas were sealed and strengthened using additional material placed at the base blended into the surrounding landscape. To meet environmental standards a natural grass finish was required. Grass is a good erosion control surface when maintained; the risk is grass die-back and localised erosion in an overtopping event.

Project Information

Client	Environment Agency
Contractor	Team Van Oord
Consultant	Royal Haskoning / Mott MacDonald
Products	Erosamat 3/20Z 500M Erosamat 3/20Z G50
Quantity	71,000m ²
Benefits	<ul style="list-style-type: none">Finished works blends into the landscapeEase and speed of installationProven performance in over-topping protection



ABG Erosamat 3/20Z 500M

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The Solution

On the occasion of an extreme storm event the embankment will overtop and water will flow down the back face at speeds up to 4m/s. A well-established grass sward can withstand only a short period of high flow. To extend the period and protect against die-back of the grass **ABG Erosamat 3/20Z 500M** was chosen as a permanent Turf Reinforcement Mat (TRM) which meets the design requirements of CIRIA Report 116. In areas regularly subjected to light traffic **ABG's** grid reinforced **Erosamat 3/20Z G50** High Performance Turf Reinforcement Mat (HPTRM) was used. There was a high risk of flooding during the construction of the embankment and it was essential to have a solution which was both quick to install and readily facilitated the establishment of sound vegetation. **Erosamat** achieved this, being light to handle, and quick and easy to install. Areas of high risk were then hydro seeded to accelerate growth.

The ABG Service

ABG provided full product and design support to aid the approval process.



Erosamat is robust and light-weight allowing quick and easy installation on this high flood risk site. Site constraints stated that there should be no area of embankment exposed to flooding for more than four hours at any time during the construction. Even with no grass the Erosamat is sufficient to protect the embankment during a flood event.



Natural vegetation binding with Erosamat and blending with the natural environment



The highest risk areas were hydro seeded to accelerate vegetation establishment

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