Embankment Reinforcement

PFA Rising Lane, Enkagrid Pro, A50 Growth Corridor, Project A Uttoxeter, UK

abg creative geosynthetic engineering

Case Study

Project Description

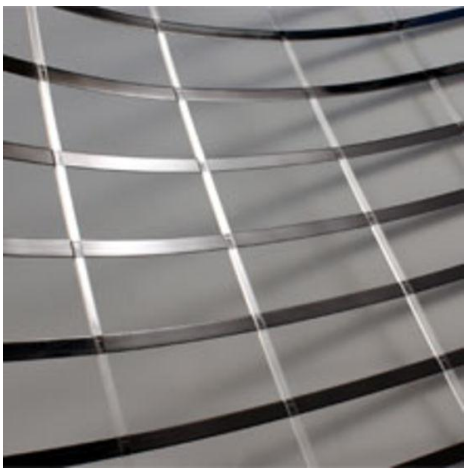
The 1.5km A50 Growth Corridor road development project to the West of Uttoxeter provides improved access to new housing and employment sites and is part of a multi-million pound investment by Government under the control of Staffordshire County Council. It also improves the access to the existing and new JCB factories to the north of the A50. The scheme delivered a grade-separated junction where embankments have been raised to an overbridge of the A50.

The Challenge

Site investigation in the area where the embankments were raised showed patches of soft made ground susceptible to differential settlement. The specification gave the option to the contractor to use a locally supplied light weight Pulverised Fly Ash (PFA) to reduce overall settlement. The challenge was to reduce the differential settlement and to give stability to the 1 in 2 rising side slopes which curved around a SuDS balancing pond. The nature of PFA is that it is fine grained and often of a high acidity. Any material used should be able to withstand any corrosive effects of the PFA, bond with the PFA and be easy to cut to shape around the relatively tight curve of the embankment. A low-creep, high-stiffness material would be preferred as any movement in the PFA is detrimental to the compaction process. As Highways England manages the A50 trunk road, BBA certification was required.

Project Information

Client	Staffordshire County Council/ Highways England
Contractor	Tarmac
Consultant	Amey
Products	ABG Enkagrid Pro
Quantity	65,000m^2
Benefits	• Maximum compaction and reinforcement of PFA • Steeper slopes using PFA • Instant load transfer – no movement



ABG Enkagrid Pro

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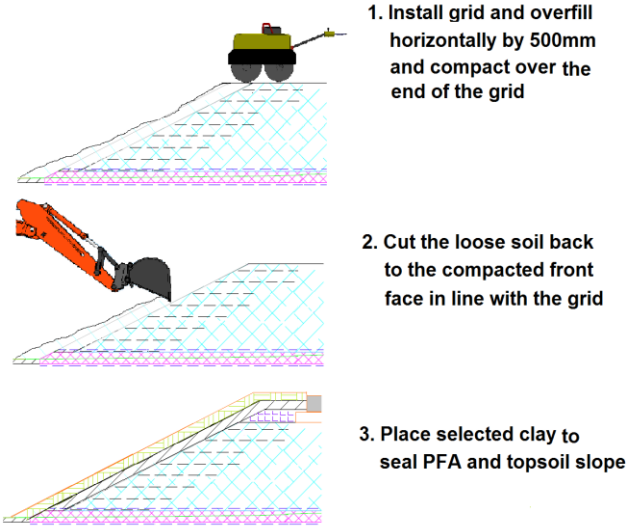
The Solution

ABG Enkagrid Pro was selected as a highly stable BBA certified low-creep geogrid. The stiffer grid lays flat and presents a high friction surface to the finely graded PFA enabling good load spreading. The grid is cut to shape easily using a disc cutter on site to suit the curved embankment. The rolls of grid are placed using a spreader beam and then overfilled allowing compaction equipment to pass over the edge of the grid (1.), ensuring a fully compacted surface. The face is then trimmed back to line (2.) and finally sealed with a clay fill and finished with a layer of topsoil (3.).

The ABG Service

ABG supplied Tarmac with all the relevant certificates and technical data sheets to satisfy the requirements of the consultant to BS8006 - Code of Practice for Strengthened/Reinforced Soils and Other as well as cortication required by Highways England via BBA.



Preparation of the slope ensuring maximum compaction and reinforcement of the PFA

Spreader beam used to position grid and cut to suit using a disk cutter

Trimming of the embankment through the compacted reinforced slope ready to receive topsoil

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

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