

Embankment Drainage

Starter Layer, Fildrain, M8 Motorway Improvement, Glasgow, UK



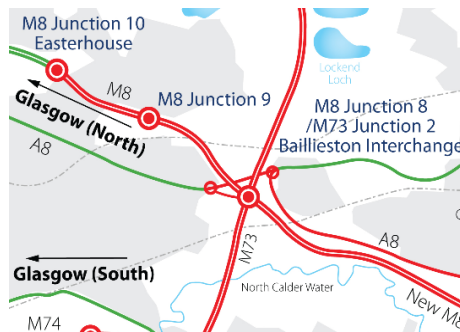
CASE STUDY



Project Description

The M8 motorway is the principal link between Glasgow and Edinburgh. A seven mile section between Newhouse and Baillieston has remained an 'A' class dual carriageway with sub-standard slip roads, considerable congestion, peak time delays and a high accident rate.

A major project has been undertaken to upgrade this section of road to a three lane motorway standard as part of the same package to improve the junction with the M74/M73 with a value of £415M.

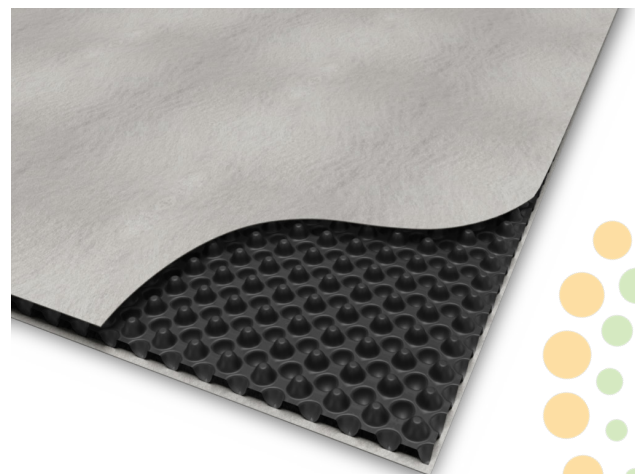


The Challenge

As part of the works, major new embankments were required with the creation of new slip roads and wider carriageways. The road alignment runs parallel to the North Calder Water River and within its flood plain resulting in a high water table. In order to be able to use locally won materials and speed up the construction of the embankment, a basal embankment drainage starter layer is required. A typical design is the use of a horizontal granular blanket of 6C stone between 300mm and 600mm deep with a geotextile to either side. This design is costly in terms of materials and installation time. Multiple vehicle movements are required to import the stone and considerable time is required to lay stone at the correct depth, often in very wet conditions.

Project Information

Client	Transport Scotland
Contractor	Scottish Roads Partnership
Consultant	Amey
Products	Fildrain
Quantity	98,000m ²
Benefits	<ul style="list-style-type: none">• Significant cost savings• Rapid installation• Major environmental savings• BBA Highways approved



ABG Fildrain Starter Layer

ABG LTD

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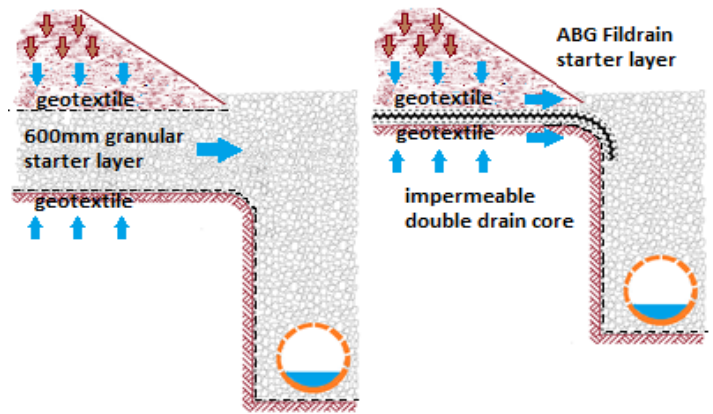
The Solution

An **ABG Fildrain** geocomposite was selected as an alternative to a 6C granular material and was shown to have superior hydraulic properties, and be robust enough to withstand short and long term design loadings. The lightweight geocomposite is supplied in rolls up to 4.4m wide, offering rapid installation thereby significantly reducing vehicle movements and congestion to local roads.

Fildrain is approved by the BBA as a starter layer in major trunk road applications under embankments up to 12m in height and offers a more cost effective and environmental solution than granular drainage layers. **Fildrain** drainage system is a double cusped impermeable HDPE core bonded on both sides to a non woven geotextile, providing drainage to both upper and lower sides. The impermeable core prevents rehydration of underlying materials during future inclement weather

The ABG Service

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



Traditional 6C Starter Layer

ABG Fildrain Starter Layer

- Superior hydraulic performance
- Core prevents re-hydration of sublayers
- Placement in one simple operation, no vehicle road or site movements
- BBA approved as a starter layer for motorway embankments up to 12m



Adjacent traffic on A8 whilst locally won fill is rolled directly onto the Fildrain starter layer



Embankments are raised along the A8 ready for upgrading to Motorway status

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