

B7052 WHAUPHILL HIGHWAY IMPROVEMENTS DUMFRIES & GALLOWAY, SCOTLAND, UNITED KINGDOM

Ground Improvement

Problem

The B7052 runs for 22km between Garlieston and Spittal in South West Scotland. Mid-way along this route is Whauphill. Heavy quarry trucks using the highway were causing damage to the existing pavement structure.

Dumfries and Galloway Council had to undertake constant maintenance to treat differential settlement cracking and potholes. In 2003, they explored solutions to reduce damage to the highway and this maintenance commitment.

Solution

A mile-long section of this rural road at Whauphill was badly affected, due to the highway being constructed on soft ground.

This section was rehabilitated with a Road MeshTM reinforced 70mm overlay.

Road MeshTM is intended for installation within the bituminous bound layers of the pavement. In remedial overlays the old wearing course is usually planed-off and the Road MeshTM placed on the exposed surface, which is then overlaid with a new base course plus wearing course. Road MeshTM causes the overlay to work as a cohesive mass, absorbing the horizontal tensile stresses and spreading the imposed traffic loadings over a wider footprint, thus reducing its damaging effect.

After 7 years of heavy trafficking from quarry trucks, the RoadMesh reinforced overlay has shown a significant performance improvement. There is no evidence of cracking or potholes and the maintenance requirement has been removed; "It has saved me a fortune", commented Dumfries and Galloway Highway Maintenance Foreman, Gus McCleary.

Maccaferri Road MeshTM provides high tensile strength at low strain and, together with its unique 3D geometry, creates excellent aggregate interlock to optimise load transfer and shear resistance. The system was initially developed to inhibit reflective cracking in asphalt layers and research has shown that the incorporation of Road MeshTM can enhance the working life of the whole pavement.

The system has been used widely in Europe and has been shown to increase the duration of pavement maintenance lifecycles.

Client: DUMFRIES & GALLOWAY COUNCIL / BARR

Designer / Consultant: Dumfries & Galloway Council

Contractor: Dumfries & Galloway Council

Products used (Qty.)

Date of construction: 08/2003 - 08/2003

[Google Maps](#)

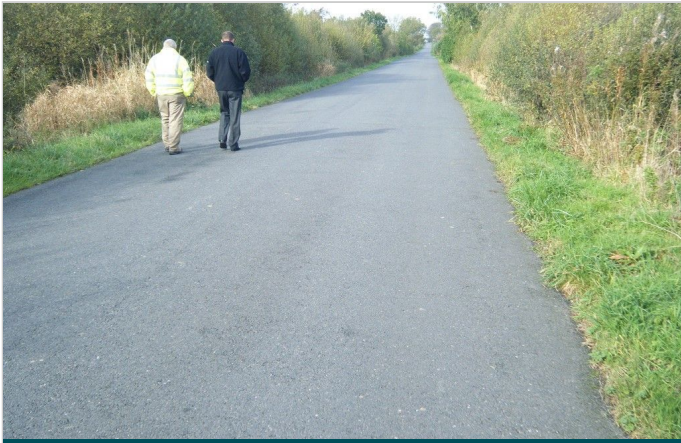
[Google Earth](#)



The 1m section runs over soft ground



Road Mesh was installed in 2003



No distress after 7 years of traffic



Heavy traffic uses this road to get to and from the
local business