

C46 ROAD REHABILITATION, GALLOWAY FOREST PARK DUMFRIES & GALLOWAY, SCOTLAND

PAVEMENTS

Product: Road Mesh™

Problem:

The Galloway Forest Park was established in 1947 and covers nearly 300 square miles. Aside from receiving nearly a million visitors per year, the park includes valuable woodland which produces 500,000t of timber each year.

Over 60 heavily laden logging trucks, use the roads daily, including a 2 mile long section which runs over boggy ground. This makes the road uneven, exacerbating the damage cause by the trucks. Cracking and rutting are the main problems of the highway.

Dumfries and Galloway Council required a solution that would reduce the almost constant maintenance demanded by these conditions.

Solution:

The road was rehabilitated in 2001 with a 60mm Road Mesh™ reinforced overlay.

Road Mesh™ was designed for use within the bituminous bound layers of pavements. In remedial overlays the old wearing course is usually planed-off and the Road Mesh™ placed on the exposed surface, then overlaid with a new base course plus wearing course. Road Mesh™ 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.

10 years later, the C46 was inspected and the overlay was surface dressed. It was found to be performing well with no major cracking or rutting, despite being subjected to the heavy logging trucks. Adjacent unreinforced sections of highway over the county border in Ayrshire, experience similar traffic and show significantly more distress.

Client:

DUMFRIES & GALLOWAY COUNTY COUNCIL

Main contractor:

DUMFRIES & GALLOWAY COUNTY COUNCIL

Designer:

DUMFRIES & GALLOWAY COUNTY COUNCIL

Products used:

Road Mesh™

Date of construction

September 2001



Heavy traffic of over 60 logging trucks per day



RoadMesh was installed in 2001



No distress after 9 years

Maccaferri Road Mesh™ 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 Mesh™ can enhance the working life of the whole pavement.

The system has been used world wide and has been shown to increase the duration of pavement maintenance lifecycles.

Road Mesh™ is made from hexagonal woven steel wire mesh. Every 160mm, a transverse steel bar is woven within the mesh, locking it into position. The steel is heavily galvanised (in accordance with BSEN 10244-2 Class A) to offer an expected design life in excess of 60 years. As it has a very open mesh, Road Mesh™ allows excellent contact between the existing pavement and the new overlay. This means that the bond between the two layers is not compromised by the presence of the Road Mesh™ reinforcement interlayer.



Adjacent distressed unreinforced sections in Ayrshire

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