

### N56 HIGHWAY IMPROVEMENTS ARDARA TO KILLYBEGS, COUNTY DONEGAL, IRELAND

#### PAVEMENTS

#### Product: Road Mesh™

##### Problem:

The National Secondary Route N56 links the towns of Donegal in the South West of the County with Letterkenny in the North East.

It is the main access route to the port of Killybegs and to west of the county. Not only is Killybegs one of Ireland's largest fishing ports, but serves as a base of oil exploration near the Irish coast. The highway is therefore subjected to large volumes of heavy goods vehicles to and from the port.

In many places the pavement is constructed over soft soils and peat bogs. Consequently, differential settlement damage to the pavement required on-going maintenance and cost commitment from Donegal County Council.

Solutions to extend the interval between maintenance were required.

##### Solution:

The pavement was rehabilitated in August 2010 with a 50mm asphalt overlay.

Road Mesh™ was used to reinforce the overlay and prevent the differential settlement cracking often associated with peat subgrades.

The method for installing Road Mesh™ varies depending upon the application and subsequent overlay depth. On this project, installation crews from McCaffrey Contractors used the "blinding technique" to secure the Road Mesh™ ahead of the paver, allowing paving operations to progress at full speed.

This technique involves the placement of small quantities of the asphalt mix directly onto the Road Mesh™ as a blinding layer. This temporarily fixes the mesh to the pavement, and removes the need for nailing the mesh to the scarified surface.

Client:

DONEGAL COUNTY COUNCIL

Main contractor:

McCAFFREY CONTRACTORS

Designer:

DONEGAL COUNTY COUNCIL

Products used:

8,600m<sup>2</sup> Road Mesh™

Date of construction:

August 2010



Unrolling Road Mesh onto pavement



Installation by 'blinding technique'



Paving onto the Road Mesh

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 widely in Europe 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.

Maccaferri recommends a minimum of around 70mm overlay to Road Mesh™. However, 50mm was used in this project by an experienced contractor.



50mm overlay applied by experienced contractor



Paver running at normal speed using the 'blinding technique'

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