

GEOSYNTHETICS

CASE STUDY **Paving - Rehabilitation of A617 Millennium Way, Nottinghamshire UK**

The A617 is a primary A-road in Derbyshire and Nottinghamshire (East Midlands) in England. Over the years cracks had occurred and rehabilitation was necessary. TenCate Polyfelt® PGM G 100/100 turned out to be the most cost-effective and technically sound solution, providing increase in lifetime. Installed as asphalt inter-layer system TenCate Polyfelt® PGM G 100/100 provides crack retardation, sealing function and stress absorption in one product.

The A617 Millennium Way, Rainworth, was opened in the year 2000. The original construction comprised a high modulus base 200 mm thick, 60 mm of binder course and 40 mm of SMA surface course. After a few years of use, signs of reflective cracking from the lower joints became apparent along the whole length of the road and in more recent times surface course failure (alligator cracks, pot holes) was occurring in large areas. Core samples were taken and while the structural integrity of the bituminous layers was good there was no bond between the base and binder course layer. The assumption was made that this was contributing to the surface course failure with the upper layers flexing over a stiff base.

Following consultation with the main contractor Lafarge Tarmac, the decision was made to plane the existing material to a depth of 140 mm, to ensure all the existing binder course layer was removed and lay an reinforcing asphalt interlayer. This would ensure an excellent bond between the layers and prevent future reflective cracking. Lafarge Tarmac proposed Asphalt Grid Systems limited to supply and install Tencate Polyfelt® PGM-G100/100 as they had previous experience and success with it in Nottinghamshire. Additionally, the proposed binder course, multilayer 20 and surface course layer ultipave D, would utilise polymer modified binders to give a highly flexible road surface.

Project Data

Application: Asphalt inlay

Location:
A617 Millennium Way, Rainworth

Products:
TenCate Polyfelt® PGM G 100/100

Quantity: 12.000 m²

Client: Nottinghamshire Highways

Main Contractor: Lafarge Tarmac

Date: March 2015



Paving

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The total area of the scheme was 12,000 m². Due to the layout of the road – part dual carriageway, roundabout and single carriageway, it was agreed that the works would be carried out under a full road closure and dual shifts utilised to ensure the road was reopened as soon as possible. The asphalt grid and bitumen bond coat was laid over two shifts (Saturday and Sunday evening) to tie in with Lafarge Tarmac's programme. All works were completed within 9 days and the road reopened a shift earlier than originally programmed.

Asphalt Grid Systems Limited is a prominent UK company, specializing in the supply and installation of Tencate Polyfelt® PGM, paving fabric interlayers. Our combined experience brings with it an extensive portfolio of successfully completed projects, including airfields, motorways and local authority work.

Due to its strategic location in the heart of south Yorkshire, AGS has great access to all parts of the UK. Their family run Haulage Company C&D Transport Ltd based in Sheffield provides a fast and effective delivery service nationally, ensuring you get the right products, when you require them. AGS' installation teams offer a 24 hr service for the supply and installation of asphalt Geosynthetics to client and National Highway Specification 13 requirements. Why does AGS use Tencate Polyfelt® PGM Products? Based on long experience, Tencate Geosynthetics has developed a complete range of products specially suited for the application in asphalt pavements, especially developed for new asphalt road construction, rehabilitation of older roads and conforms to EN15381.

TenCate Polyfelt® PGM G 100/100 is an asphalt interlayer fulfilling the functions of barrier, reinforcement and stress relief. The product consists of a non-woven fabric which is reinforced by high strength glass fibres. Together with sprayed tack coat it prevents the ingress of water and oxygen in the lower layers, it reduces the stresses between existing sub-base and wearing course and provides reinforcement for the new asphalt.

For more information, please contact:

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