

Asphalt Reinforcement

Broadfield Roundabout Resurfacing, Fortifix, Crawley, UK



Project Description

Broadfield Roundabout is a busy intersection on the A2220 Horsham Road, 1 mile to the west of Crawley town centre in West Sussex. The junction links Horsham Road, Bewbush Drive and Broadfield Drive (with access to Broadfield Stadium, home of Crawley Town FC). A further 300m up the Horsham Road, the A2220 joins with the A23 dual carriageway, a major route linking London to Brighton.

The Challenge

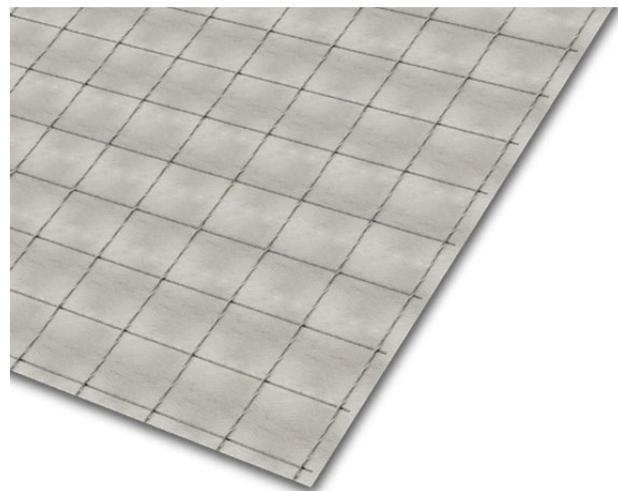
The low tensile strength of asphalt means it is easily damaged by a number of factors including settlement, fatigue, temperature fluctuations and vehicle loadings. Damage arising from reflective cracking usually manifests as a cracked or broken surface which has implications for the comfort of the road user, vehicle damage and to the subsequent on-going maintenance costs of the paved area. A solution to provide long-term reinforcement of the heavily trafficked and damaged surface of the A2220, with extended maintenance intervals to minimise future disruption was sought by West Sussex County Council.

The Solution

The Fortifix steel-cord interlayer provides optimum high strength, low strain properties. The fine twisted steel cord structure is far less brittle than glass fibre grid alternatives, with a Young's modulus of 190 GPa compared to 70 GPa. The twisted steel strand structure also affords a large surface area for asphalt overlay interlock. The reinforcement properties and improved bond strength stiffens the overlay against lateral movement under thermal stress and loading and significantly delays the formation of reflective cracking. This prolongs maintenance intervals by up to 4 times and offers an excellent cost benefit ratio, with the cost of the installation over the lifetime of the road approximately

Project Information

Client	West Sussex County Council
Contractor	Thermal Road Repairs
Consultant	Tarmac
Products	Fortifix 1C
Quantity	5,000m ²
Benefits	<ul style="list-style-type: none">• High strength, low strain steel-cord interlayer provides optimal reinforcement• Reduction in reflective cracking formation provides extended maintenance intervals• Excellent cost benefit ratio



Fortifix steel-cord asphalt reinforcement interlayer

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half that of an unreinforced overlay. For installation purposes the Fortifix steel-cord grid is mounted onto a light-weight carrier geotextile, and following planing of the old road surface a regulating course was applied. A polymer modified bitumen emulsion bond coat was then sprayed. Once the bond coat cured, the Fortifix interlayer was installed. The heat of the overlay draws the emulsion coat through the geotextile to form a bond with the overlay, creating a strong homogenous pavement. The installation was carried out during night time closures to minimise disruption to road users and local residents, with the Fortifix cut to size offsite for staggering the material around bends and further saving on construction time.

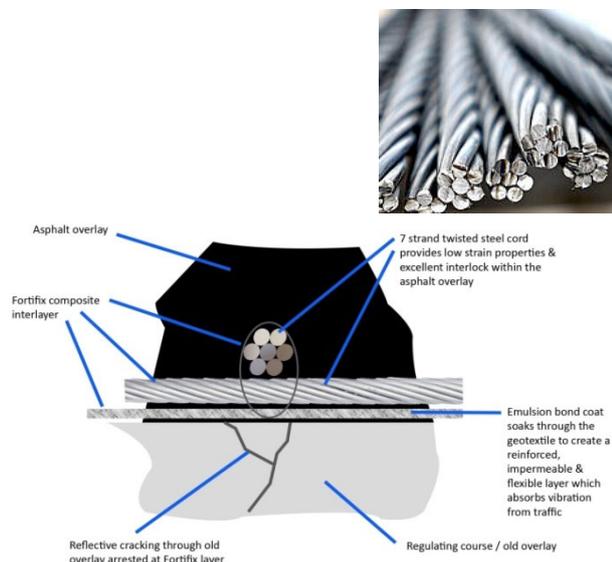
The ABG Service

ABG provided technical, specification and installation support for the project including a cost-benefit analysis. The Fortifix solution reduces the depth of asphalt overlay required and is fully recyclable at the end of life, helping to meet the sustainability objectives of the repairs.

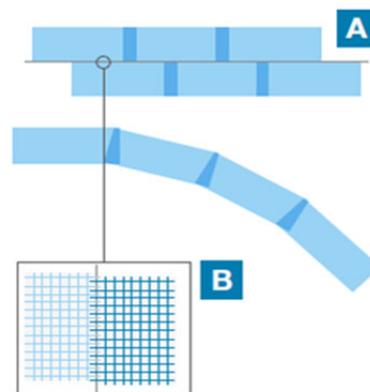


5,000m² of Fortifix was installed for the Broadfield scheme in total

Contact ABG today to discuss your project specific requirements and discover how our past experience and innovative products can help.



The Fortifix steel-cord structure achieves a strong interlock and bond strength within the asphalt overlay



Overlap and staggering of adjoining sections around corners