

Project Report

A243, Leatherhead, Surrey, UK

October 2006

CLIENT: TRANSPORT FOR LONDON

SPECIFIER: HYDER CONSULTING

MAIN CONTRACTOR: BARDON CONTRACTING LTD

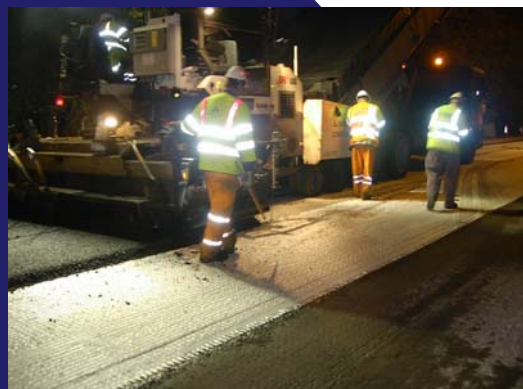
PAVING FABRIC INSTALLER: FOSTER CONTRACTING LTD.

Background

The A243, in south west London, runs from Junction 9 of London's orbital motorway, the M25, northwards towards Kingston upon Thames. The original pavement construction which comprised a bituminous surface overlying an unreinforced concrete slab road base was suffering from extensive reflective cracking, settlement and fretting. Carriageway deterioration had been caused by the high traffic volumes associated with a busy London road. This had been further exacerbated by various utility companies dissecting the construction to carry out their necessary maintenance and replacement operations. Consequently, as part of Transport for London's annual capital maintenance programme, the decision was taken to restore the integrity of the highway in October 2006.



View of the planed/damaged surface



Installation of the PGM-G 200/200

The high peak day-time traffic volumes using the road meant that it was not possible to facilitate the repairs during the day. Instead an approval was granted to undertake the works at night, thereby minimising any disruption to the travelling public. Furthermore, all noisy operations were restricted to the early evening and eliminated during the paving fabric installation by use of Foster Contracting Ltd's specialist equipment.

Solution

After planing off the old surfacing, the exposed concrete carriageway was covered with the polymeric Geocomposite PGM-G 200/200, manufactured and supplied by TenCate Geosynthetics, and overlaid

with a bituminous surfacing. PGM-G 200/200 is the highest grade of product available in TenCate's portfolio and was specified due to the severity of some of the cracks and also because it was understood that previous attempts to restore the carriageway had proved less successful than anticipated.

The Asphalt Reinforcement Geocomposite PGM-G 200/200 was installed with the following objectives:

- To retard the formation of reflection cracks in the bituminous inlay
- To seal the cracks in the underlying layers and prevent penetration by water and oxygen
- To reinforce the asphalt layers of the carriageway
- To prolong the life of the carriageway

Installation

Prior to the installation of the PGM-G 200/200, main contractor Bardon Contracting Ltd were required to plane the carriageway, thoroughly clean the exposed surface, and fill exposed cracks greater than 4mm width. This essential process ensures a 100% bond between the planed surface and the paving fabric.

Once this had been successfully undertaken, a bond coat of 160/220 pen bitumen, at a temperature of 180°C, was sprayed onto the planed surface by Foster Contracting Ltd's calibrated tanker at a rate of approximately 1 litre/m². Immediately behind the tanker, Foster Contracting Ltd then used their bespoke laying machine to install the PGM-G 200/200 under tension directly onto the hot bond coat.

Combined experience of 40 years has shown that this particular geocomposite does not need to be installed over a bituminous regulating layer nor does it require any additional fixing. Together these factors reduce the risk of associated problems such as inadequate fixings becoming dislodged. Delays to the surfacing operation are also mitigated as a pad course is not required.

Finally, Bardon Contracting Ltd overlaid the PGM-G 200/200 with a Supaflex wearing course. Efficient working methods combined with effective coordination between all parties enabled a total of 5,000sq.m of road refurbishment to be successfully completed over a 3 night period.



Join in the surfacing showing start of the project



The refurbished carriageway

Product Details

TenCate PGM-G 200/200 paving Geocomposite is a mechanically bonded continuous filament non woven geotextile made from 100% polypropylene and reinforced with high modulus glass filaments. The product is characterised by its uniform bonding, optimum bitumen storage capacity and efficient load uptake at very low strains of less than 3% thereby providing the ideal solution for highway maintenance. In addition, construction plant can traffic the geocomposite during the surfacing operation without damage or picking up.

TenCate develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

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