

# Project Report

Stamford Street , Lambeth

March 2007

**CLIENT: TRANSPORT FOR LONDON**

**SPECIFIER: THE PROJECT CENTRE**

**MAIN CONTRACTOR: T E BEACH (CONTRACTORS) LTD**

**PAVING FABRIC INSTALLER: FOSTER CONTRACTING LTD.**

## Background

The A3200 Stamford Street, Lambeth, runs between Waterloo Roundabout to the west and Blackfriars Road to the east. This section of road is 1,400 meters long, single carriageway and is an exceptionally busy part of the central London transport network. The existing pavement construction for this important route comprises a composite construction with a thin bituminous surface overlying an un-reinforced concrete slab road base.

High traffic volumes and dissection of the road base from utility trenches/works had resulted in significant deterioration of the road with extensive reflective cracking, settlement and fretting.



*Cracking to the existing road surface*



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In March 2007, as part of Transport for London's annual capital maintenance programme, essential carriageway repairs were undertaken to restore the integrity of the highway. To limit disruption to the travelling public and maintain traffic flows during peak periods, the work was approved to be undertaken at night, as is the usual practice on London's busy streets. Noisy operations were restricted to the early evening and eliminated during the installation by use of Foster Contracting Ltd's specialist plant.

## Solution

After planing off the old surfacing, the exposed concrete carriageway was covered with PGM-G 100/100 polymeric geocomposite, manufactured and supplied by TenCate Geosynthetics, and overlaid with bitumen binder and surfacing layers.

The paving fabric TenCate Polyfelt PGM-G 100/100 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

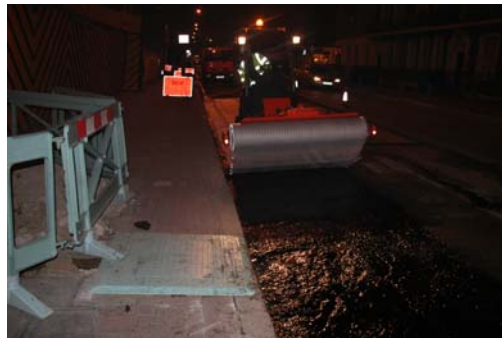
### Installation

Prior to the installation of the TenCate Polyfelt PGM 100/100, main contractor T E Beach (Contractors) Ltd. were required to plane the carriageway to a depth of up to 140mm, thoroughly clean the exposed surface, and fill exposed cracks greater than 4mm width. This process ensures a 100% bond between the planed surface and the paving fabric.

Once this had been successfully undertaken, TenCate's specialist installation contractor, Foster Contracting Ltd, used their calibrated tanker to spray a bond coat of 160/220 pen bitumen at a rate of approximately 1 litre/m<sup>2</sup> and at a temperature of 180°C onto the planed surface. Immediately behind the tanker, the PGM-G 100/100 was laid under tension onto the hot bond coat. Using their bespoke laying machine Foster Contracting was able to do this smoothly and seamlessly on straight roads and also around radii such as roundabouts.



*Spraying of the bond coat*



*Installing the PGM-G 100/100 onto the 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, T E Beach (Contractors) Ltd. overlaid the PGM-G 100/100 with 60mm Binder course and 40mm Surface course. In total, 5.000 sq.m of road refurbishment was successfully completed over a 6 night period.

### Product Details

TenCate Polyfelt PGM-G 100/100 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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