

# Project Report

Middlesex Street, London Borough of Tower Hamlets

February 1995

**CLIENT : LONDON BOROUGH OF TOWER HAMLETS**

**SPECIFIER : LONDON BOROUGH OF TOWER HAMLETS**

**MAIN CONTRACTOR : T E BEACH SURFACING LTD**

**PAVING FABRIC INSTALLER : ASPHALT GEOTEXTILE SERVICES LTD.**

## Background

Situated within London Borough of Tower Hamlets, Middlesex Street is a very busy shopping street within the east end of London. Since the construction of the existing road, the surface, as can be seen from the photograph below, had deteriorated significantly. This was due in part to fragmentation by utility works but also to the rigours of modern day traffic loadings. The road itself is approximately 1,100 meters long, more when the associated side streets, whose condition had also deteriorated and were therefore also in need of repair, are taken into consideration.

In February 1995, London Borough of Tower Hamlets took the decision to undertake the repair work necessary to restore the condition of the road. Although the works were carried out in a bustling shopping location it was deemed unnecessary for the work to be undertaken at night. Instead the operations were planned to minimise disruption to the public as much as possible. This was aided by the ability to traffic over the chosen paving geosynthetic before it had been overlaid with the bituminous binder and surface courses.



*View of the existing road surface : 1995*



*View of the road surface : 2007*

## Solution

After planing off the old surfacing, the exposed concrete carriageway was covered with PGM-G 100/100 polymeric geocomposite, manufactured and supplied by Polyfelt Geosynthetics (now 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

The existing road surface was planed to a depth of 50mm by the main contractor T E Beach Surfacing Ltd who was then responsible for sweeping clean the surface and filling any cracks greater than 4mm width within the surface. The filling of cracks is a vital task within the construction sequence and ensures that a complete bond is achieved between the planed surface and the paving fabric. This in turn prevents the downward movement of oxygen and water through the new road cross-section.

Specialist contractor Asphalt Geotextile Services Ltd. (now Foster Contracting Ltd.) sprayed a 160/220 pen bitumen tack coat from their calibrated tanker. This was done at a rate of approximately 1 litre /m<sup>2</sup>. Asphalt Geotextile Services Ltd. then used their specifically designed laying machine to lay the TenCate Polyfelt PGM-G 100/100 onto the hot bond coat and achieve the required sealing. Once these operations were complete, the PGM-G 100/100 was overlaid with 50mm of Hot Rolled Asphalt. In total, including the adjoining side streets 6.000m<sup>2</sup> of road was refurbished and as can be seen from the photos, the road surface is still performing well some 12 years on.



Installation of the PGM-G 100/100



Installation of the PGM-G 100/100

## 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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