

Case Study: 003

CONTRACT DETAILS

Geosynthetic Installer:
Foster Contracting Ltd.

Surface Dressing Contractor:
T E Beach (Contractors) Ltd.

Client:
London Borough of Tower Hamlets

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 left, 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 needed to be 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 let traffic pass over the 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 100kN/m x 100 kN/m composite geosynthetic, and overlaid with bitumen binder and surfacing layers.

The paving fabric 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 prevents the downward movement of oxygen and water through the road construction.

Specialist contractor Foster Contracting Ltd. sprayed a 160/220 pen bitumen tack coat from their calibrated tanker at a rate of 1.1 litre/m². FCL then used their specifically designed laying machine to lay the 100kN/m composite onto the hot bond coat and achieve the required sealing. Once these operations were complete, the composite was overlaid with 50mm of Hot Rolled Asphalt. In total, including the adjoining side streets 6.000m² 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 100kN/m composite



Hot rolled asphalt surfacing

FCL

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