Photo of Stephenson's Drive taken in 2021 which demonstrates more than 10 years post installation in-service life.

Roads and Pavements
№ 290

# Stephenson Drive

Leicester, UK

**CONSTRUCTED IN 2011**

## Benefits

**Mitigate against** reflective cracking

**Reduce maintenance** by a factor of at least two

**Experienced Tensar asphalt reinforcement installer** with Foster Contracting Ltd

## Glasstex installation at Stephenson Drive

Tensar Asphalt Reinforcement systems were used by Leicester City Highways Department to mitigate the potential for reflective cracking on Stephenson Drive.

### CLIENT'S CHALLENGE

The reflective cracking that had previously appeared in busy Stephenson Drive, a bus route close to Leicester city centre, was accompanied by potholes and widespread surface deterioration. The principle cause was the instability of the concrete paving slabs underneath the asphalt surface course, due to rainwater infiltration into the founding support. There was also evidence of asphalt fatigue and rutting, extensive patching over fractured slabs, potholes, numerous service trenches, movement due to tree roots and some potential subgrade driven failures.

### TENSAR SOLUTION

To mitigate the effects of the reflective cracking in the new asphalt surface layers, Tensar proposed Glasstex composite asphalt interlayer as a stress absorbing membrane interlayer (SAMI) to help dissipate the stress from potential movement in the unstable concrete foundation and as such, potentially halve the road maintenance requirements.

Tensar Glasstex was used by Leicester City Council to mitigate potential for reflective cracking on Stephenson Drive

## PROJECT BACKGROUND

Leicester City Council Highways & Drainage Department had improved the stability of the concrete through a specialist crack and seat process, but some differential movement potentially remained, which would be exacerbated by tree root growth and inevitable service trench excavation and filling. It was estimated this would have needed wide scale maintenance within a maximum of 10 years had provision not been made for a SAMI.

To achieve an asphalt surface which would accommodate this residual instability, Bardon Contracting started by installing a 0/6mm sand asphalt regulating course to provide a smooth layer over the uneven broken concrete foundation. Foster Contracting then sprayed a bond coat of 160/220 pen straight run bitumen @ 1.1 l/m2 using one of their own calibrated tankers, immediately followed by their specially developed plant to install the Glasstex P100 composite directly onto the bitumen bond coat layer.

Due to instant break time of the 160/220 pen bitumen bond coat, the installation of the final 40mm asphalt surface course could commence immediately, causing no delay to the surfacing operations.

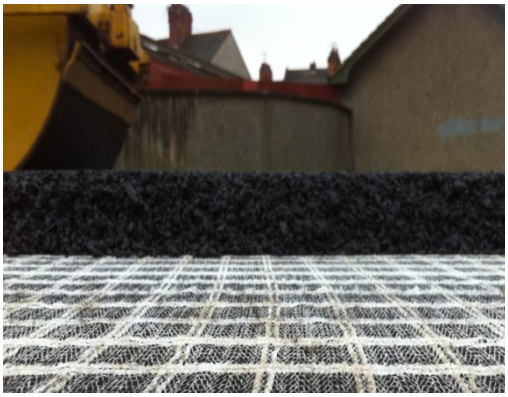
This type of asphalt reinforcement solution has been shown to reduce maintenance by a factor of at least two, even with such potential for instability. By making a slightly greater investment to achieve a solution tailored to the site's needs, this solution can demonstrate real savings in long term maintenance requirements.

## Client
Leicester City Council Highways and Drainage Department

## Contractor
Bardon Contracting

## Asphalt Reinforcement Installer
Foster Contracting Ltd

**Crack and seat before regulating course**



**Tensar Glasstex P100 is laid to mitigate against reflective cracking and limit its spread into the newly laid asphalt course**