



Proven performance

14 YEARS OF CRACK RESISTANCE ON CHALLENGING ROAD

The challenge

This country road in Alderminster, to the south of Stratford upon Avon was suffering from severe cracking and required resurfacing. This section of road had suffered from repeated cracking, caused by expansion and contraction in the underlying clay. The resulting cracks in the surface course were deep and severe, allowing water to enter the pavement and cause further damage. The client was keen to explore alternative solutions to extend the life of the pavement surface and break the costly cycle of repeated failure and remedial maintenance.

Our solution

After discussions with Tarmac as key supply partner, the client decided to undertake a trial. It would compare the performance of ULTILAYER, Tarmac's high performance crack resisting asphalt with the previous default solution, 55/10 Hot Rolled Asphalt with 100/150 pen binder. ULTILAYER has been specifically developed to combat reflective cracking and road surface deformation. It uses a high performance polymer modified binder (PMB) combined with carefully designed aggregate grading. This makes it highly flexible which provides superior resistance to cracking.

Results and benefits

After three months there was significant cracking clearly visible in the HRA. In contrast the ULTILAYER section was entirely crack-free with no signs of deterioration. Monitoring of the site since then has shown that despite the challenges of the underlying ground conditions, ULTILAYER resisted cracking for 14 years. This represents a huge improvement in both crack resistance and pavement life with significant implications for return on investment for the client. Since this work was completed, ULTILAYER has been used on a number of other schemes on the client's road network.

Site inspection October 2022

The trial site was inspected again in October 2022 by one of Tarmac's Technical team. The HRA surface was suffering from severe and extensive longitudinal cracking, clear evidence of the ongoing long-term problem with movement in the underlying clay soil. By contrast, the ULTILAYER surface was performing well over 14 years since it was laid in June 2009. The surface course was in good condition and free from any of the deep cracks that had damaged the HRA surface. Images 3 and 4 show the marked contrast between the performance of both materials where they join, with the cracked HRA in the foreground and ULTILAYER show in the background. This trial demonstrates the benefits of using ULTILAYER on problem roads suffering from challenging ground conditions. The enhanced flexibility and fatigue resistance has helped to prevent the underlying movement from creating surface cracks and has broken the costly, disruptive cycle of failure and repair.



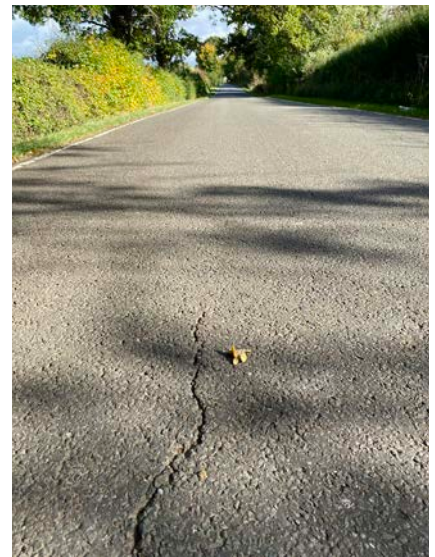
HRA section



Utilayer section



HRA (foreground) /
Utilayer (background)



HRA (foreground) /
Utilayer (background)