

## ULTIFLEX ULTILAYER

# Proven performance

### THE CHALLENGE

The A404(M) or Maidenhead and Marlow Bypass is a busy section of dual carriage way connecting two key routes into West London, the M40 and M4 motorways and linking Maidenhead, Malow and High Wycombe. Since the road was originally built in 1961, traffic volumes using this route have grown steadily. Deterioration and movement in the lean concrete base along with the high volumes of traffic that use this route have meant that the road surface was suffering from severe and persistent reflective cracking. Sealing these cracks had become a drain on maintenance budgets and risked repeated disruption for road users who used this vital part of the road network. The client National Highways (then Highways England) was concerned about the speed of this deterioration and decided that urgent action was required, however full depth reconstruction was ruled out due to time and budgetary constraints. They wanted to explore a long-term solution that would deliver a long-term crack resisting surface and end the costly and disruptive cycle. As the A404 is high speed road and runs alongside residential areas in the South West of Maidenhead, the new surface course also needed deliver low noise levels to minimise the impact on local residents.

### OUR SOLUTION

Tarmac recommended ULTIFLEX as the surface course, a Clause 942 BBA HAPAS approved thin surface course asphalt that incorporates high PSV aggregates and a polymer modified binder to deliver proven long-term durability. To help provide additional crack resistance and accommodate movement in the lean mix base, ULTILAYER, Tarmac's high-performance polymer modified asphalt was recommended as the binder course. ULTILAYER combines outstanding flexibility, strength and fatigue resistance to provide enhanced resistance to reflective cracking. It has become the go to troubleshooting solution for problem roads. The low void content of the ULTILAYER layer binder course would also help to reduce water ingress and help prevent further deterioration in the lean concrete base. The chosen pavement design would consist of a 50-100 mm ULTILAYER binder course plus 30 mm ULTIFLEX surface course. This would combine the long-lasting texture, wear resistance and low-noise characteristics ULTIFLEX with the flexibility of ULTILAYER to stop underlying movement in the base from causing cracking in the surface course.

### RESULTS AND BENEFITS

Resurfacing work was completed in stages with phase one taking place in 2009. As the new surface was seen to be performing well, this was followed by the second phase in 2011. Using this pavement solution represented a significant upgrade in this section of road without the long-term disruption and closures associated with full depth reconstruction of the base. Based on available evidence from other locations, this should deliver much longer lasting performance and significant reduction in maintenance costs and overall whole life costs of operating the road. Despite high volumes of traffic, no significant cracking has been reported to date and the crack sealing programme that was required to maintain this problem road is no longer required. This represents a significant financial saving for the client and a big reduction in disruption for road users on this key strategic route. The excellent finish and negative texture of the ULTIFLEX surface course has also helped deliver significant noise reduction, which will have been welcomed by local nearby residents living close to this busy route.



Building our future