

“We are really keen to reduce our carbon footprint in maintaining Lancashire’s roads and we are hoping to use this technique as part of our Highways Decarbonisation Strategy. This year in our carriageway capital programmes, we are predicted to save 150 tonnes of CO<sub>2</sub> through using lower carbon processes.”

Phil Durnell, Director of Highways and Transport, Lancashire County Council

# Solutions



## Sustainable Construction

### Rubber modified asphalt and RAP for Lancashire Council

Tarmac engaged with Lancashire Council as part of its highways decarbonisation strategy to introduce more sustainable materials into standard road maintenance activities.

The aim was to use materials with lower carbon emissions but also to maintain or enhance durability and pavement life and. After exploring the range of material options, they decided to take a multi-faceted approach, by incorporating higher proportions of recycled materials and secondary materials, while using the latest warm mix binder technology.

ULTIPAVE R was trialled on a local resurfacing scheme in Padiham, to the north-east of Burnley. ULTIPAVE R is an asphalt that incorporates recycled rubber from old tyres and uses warm mix asphalt technology to reduce carbon emissions during production typically by around 8-10% compared to the equivalent.

In addition to delivering carbon savings, using recycled rubber crumb in the mix helps to avoid export of waste car tyres that cannot be recycled in the UK. This equates to approximately one car tyre per tonne of asphalt or 750 tyres per kilometre of road, depending on layer thickness. For this project we used around 150 tyres in the road in just one day which would have otherwise gone to landfill.

As a warm mix asphalt, ULTIPAVE R also offers proven gains in productivity, requiring less time to reach trafficking temperatures and allowing more work to be completed



within a given operating window. Warm mix asphalts also significantly improve air quality for maintenance teams and residents by reducing site fumes by approximately 90% compared to equivalent hot mix asphalt.

To further enhance sustainability, the lower layers of the carriageway could also be recycled using a cold foam mix process. This is a solution that allows for the recycling of asphalt planings

and offers closed-loop road reconstruction. This would enable around 95% of the old road to be processed and reused as a new base course material.

Asphalt recycling is important for both environmental and financial reasons. Firstly, recycling this material is a good way of reducing the carbon footprint of repairing roads. Secondly, recycling allows us to reduce our reliance on the limited resources of aggregates. Thirdly, by recycling asphalt we can reduce the volume of bitumen, the raw material in asphalt.

Overall, by using recycled materials in the lower layers and ULTIPAVE R surfacing, we have lowered the carbon footprint of this scheme by over 30%.

Resurfacing work took place on the Abingdon Road using the recycled foam mix asphalt base and 160 tonnes of ULTIPAVE R surface course. The client was delighted with the finish and the significant carbon savings achieved.