



Through our business Tynedale Roadstone we manufacture and supply the innovative Plastipave® product range. By utilising end-of-life plastic waste streams, preventing them from going to landfill or incineration, we contribute to a circular economy and ensure complete traceability.

Plastipave Eco is our low carbon WMA (warm mix asphalt) solution and can replace all traditional BS 594987 and CI 942 mixes, except HRA Surface Course. While typical asphalts are produced at up to 190°C the simple principle behind WMA technologies is to manufacture asphalt at reduced temperatures but with additional additives, thereby using less energy and delivering meaningful carbon savings, without compromising performance.

Produced at temperatures up to 40°C lower than traditional asphalt, if all production in the UK switched to WMAs, it would save around 61,000 tonnes of CO₂ a year. The equivalent of cutting around 300 million miles of car journeys.

Carbon reduction

The lower production temperatures of WMAs reduce the carbon emissions associated with asphalt production by up to 15% compared to Hot Mix Asphalts.

Increased productivity

Reduced laying temperatures mean that WMAs take a shorter time to cool so greater volumes of asphalt can be laid in one shift or the finished surface opened earlier to traffic without the risk of the material deforming under heavy loads. This will increase productivity by enabling more material to be laid within a working window, reducing the overall timeframe of the works and potential delays to motorists.

Improved health and safety

Reduced temperatures also help to reduce the health and safety risks associated with both production and laying of asphalt at high temperatures such as burns, exposure to fumes and the impact of steam on visibility, particularly when wearing safety eyewear. With WMAs, fume generation is reduced by around 50% for each 10°C reduction in temperature.

Improved durability

Due to being laid at lower temperatures and the increased amount that can be laid in a single shift, it also means less construction joints in the road, requiring less maintenance in the future. This again increases the long-term benefits of the technology, life-time cost and need to undertake further maintenance.

A66-A67 Airport Link Darlington Council



In 2021 we were supported works to carry out in-situ recycling of two sections of carriageway on Sadberge Road.

The process pulverised the existing pavement to a depth of 250mm and introduced cement to produce a hydraulically bound base material onto which a new surface course was to be laid.

The remit was to produce an environmentally low carbon road utilising technology to prolong the life of the pavement. The surface course material needed to be produced using warm technology and ensured carbon savings through the low temperature mixing process.

Using Plastipave Eco, which utilised a pre-blended polymer modified bitumen and low temperature additive for consistency of mixing, 1230 tonnes of material was produced and laid over 3 shifts at an average depth of 45mm.

Benefits

- Savings from warm mix technology equated to a saving of 9.48 tonnes of CO₂
- Safety benefits due to reduced steam during laying
- Early access to road users reducing delay.

Environmental savings of using Plastipave products:



Volume of asphalt
1,222.56 tonnes



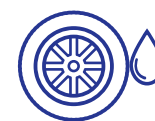
Plastic waste
1.27 tonnes



Rubber crumb
0.64 tonnes



Number of plastic milk cartons
29,569



Car tyre residue
757



Total carbon saving
10.86 tonnes