Resurfacing revolution

New pioneering technology being used by Highways England and its contractors A-one+ means it's significantly quicker to resurface a road than using more conventional methods. The machinery, a cold recycler 3200 CR, has been used for the first time in the UK, allowing the underlying layers of the road to be recycled, churning up the old surface material, treating within the body of the machine then laying it back down immediately on the road behind.

The new technology has just been used on a mile-long stretch of the A1 near Brownieside in the north east. Steve Bishop, project manager, for Highways England is responsible for the road. Here, he explains how the process works

What does Highways England do now?

The current process for resurfacing a road is to plane off the old road construction and take it away in trucks as waste. The new material is then mixed off site, brought in hot and laid using a paving machine. The new loads are brought in 20 tonne batches at temperatures in excess of 140 degrees.

How does the cold repave work?

The machine planes out the old underlying layers within a 3.2 metre wide milling drum which has 200 teeth and operates at 200 revs a minute, and mixes the planed material with a pre-determined bitumen emulsion.

This mixture is then carried along a conveyor belt and dropped into the Vogele Super 1900-3i tracked paving machine. It is then laid as you would with a normal imported hot material. As the name suggests the whole process is done without heating the mixed material. A layer of surface course is then laid over the top as usual.

What are the benefits to cold repaving?

This new technology means that in excess of 1,000 tonnes per shift can be resurfaced compared to typically 350 tonnes per shift using conventional methods.

As well as being able to resurface larger areas, there is also a 75 per cent reduction in the amount of quarried stone used on the job, a 66 per cent reduction in the amount of waste taken to landfill and there are 70 per cent fewer lorry trips to and from site. Fewer vehicle movements also means a much safer site for our workforce.

What is the benefit for drivers?

This new technology is brilliant news for the thousands of drivers that use motorways and major A-roads in the north east, who will benefit from smoother and safer journeys. There are lots of benefits to using this new way of working. It means we can resurface larger areas of road, there are fewer construction vehicle trips and the road surface is designed to last much longer, meaning that we shouldn't need to go back to carry out further repairs any time soon meaning less disruption for drivers.

Where else has the technology been used?

This is the first machine of its type in the UK but the process is already successfully used in the USA, France and China. We are always working with our partners to trial new technologies that will help us to minimise disruption to drivers while we carry out essential road maintenance.

The machine is owned and operated by Lane Rental and is the only machine of this type in the UK purchased from the worldwide company Wirtgen UK.

What else are you doing to improve resurfacing?

We have also used a new resurfacing method where we laid 1,100 tonnes of road surface in one night. A single crew from our contractors Balfour Beatty Mott MacDonald carried out the work on a two mile stretch of the M6 in the north west between junctions 28 and 27 near Leyland back in June. The project involved 25 workers each night and took place over two nights, with all of the preparation work taking place on a Friday night including planing off the existing surface and repairing deep cracks and potholes. A lane closure was kept in place during the day on the Saturday to protect the unfinished road surface and meant crews could focus entirely on laying the new 50mm thick tarmac on the Saturday night.

The normal method of working would have required workers to be out on the motorway for seven nights to allow small sections of the carriageway to be repaired and resurfaced each night.