

AMEY

Highways England

Area 7

The Challenge

Amey's contract to maintain Highways England Area 7 in the East Midlands involves 370km of highways in the East Midlands, including stretches of some of the UK's busiest motorways. On the M1, near junction 22, Amey was facing a reoccurring problem with a longitudinal joint around 16m long which kept opening up, despite repeated attempts to repair it.

Amey had tried a variety of methods, including a specialist cold pothole repair system, but each time the new material failed to bond properly to the sides of the crack. This meant that water got into the repair and the joint opened up once more.

Amey was looking for a repair method that would fix the failing joint permanently. The alternative would be to plane off a section of the wearing course around the joint and relay it – a costly and time-consuming operation that would require significant traffic management and cause disruption to the users of the M1.



The Solution

Thermal Road Repair's (TRR's) patented system works by heating up material in and around a defect, mixing the heated material with a small amount of new asphalt mix and then compacting it. The level of heat applied is monitored and automatically controlled so that the bitumen within the existing road is not overheated and damaged through oxidation.

The result of this process is an area of homogeneous material, with no cold joints. This means that there are no remaining cracks or joints through which water can enter, so that the treated zone will last as long as the surrounding pavement.

The TRR method vastly reduces lorry movements and hence disruption to road users. Unlike traditional methods, there is no need for additional vehicles to take waste material away and requires far less equipment. The TRR unit involves two heater units mounted on the side of a van which is driven along the joint at a speed of between 2 and 3 metres per second.

With no need to break out the area around the defect, using a jack hammer or saw, the TRR process is also much faster than traditional methods and creates far less noise and dust.

Repair Details



The failing longitudinal joint was on the M1 Northbound at Junction 22, between lanes 1 and 2.

The Results

Within a week of being approached to undertake the work, TRR deployed a crew of three people to carry out the works on Saturday 14 August 2021, during the night. The whole process took around 90 minutes.

The area of defective pavement that was treated was around 16m long, 500mm wide and 40mm deep. No material was removed from the road, with just small quantities added where needed, all of which came to site in the one TRR unit.

Compared to traditional methods, the process was much faster - and more cost effective. Because the two lanes were only closed for a short amount of time late at night, there was far less disruption to drivers.

The TRR process also offers environmental benefits. Due to the reuse of existing material and the reduction in vehicle movements, its carbon footprint is far lower than that for a traditional process. Its biggest environmental benefit, however, is its longevity, saving the carbon that would have been used for repeated repairs.

Before



After



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