

Making worn roads good the simple way

Repave is an effective but economic surface course recycling process 'that does exactly what is says on the tin'.

Kevin Harding and Michael Turley have the look of men confident in the quality of their firm's products. They both work for Colas – Harding as Operations Manager, Recycling and his colleague as Business Development Manager – and today are extolling the virtues of Repave to Modern Asphalts magazine. They are on site along the South Coast at Portsmouth and (as usual, they say) everything is going well.

Few people have not heard of their employer: Colas is one of the world's biggest builders of roads. The company invests hugely in research and development and has a long history, for example, in recycling; in particular recycling in situ. Repave is one of Colas' in situ processes and has been on offer for the last dozen or so years. It is currently gaining a higher profile with satisfied clients and the

Portsmouth job provides an indication that practice is making perfect.

About 16,000m² of two lane, single carriageway B2177 are undergoing 'Repaving' at a rapid rate, while traffic continues to pass. The top 50mm or so of

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the south bound lane's surface is being processed by the Colas Repave train while passing vehicles (northbound and southbound in turn) use the north bound lane. In the afternoon, the train and the traffic will swap over, work beginning on the north bound lane while motorists move on to the new surfacing.

"Traffic management is simple and delays to vehicles kept to a minimum, even on narrow roads like this," Kevin Harding says. But what of the reprocessed carriageway itself? The newly resurfaced South Coast road, topped by Colas' own HAPAS approved Colrug thin wearing course, looks the business – apparently durable, level and skid resistant.

"The client Colas Portsmouth PFI should be happy. This surfacing will provide years of use at relatively low cost." (The client's attitude was later confirmed by Graham Mook, Business Manager of Colas Portsmouth, who said that more use will be made of Repave in Portsmouth in the future, where it is appropriate.)

The Repave process involves heating the top 30mm of existing asphalt to around 150°C, scarifying the softened material to rework it, levelling this and then



Inlaying along the A1

Slow lane rutting on the A1 between Stamford and Grantham was made good this summer with Repave inlays. The affected areas were planed to a depth of 25mm and reinstated with Repave and Colrug thin wearing course bound with Colflex polymer modified binder. The Highways Agency's Managing Agent Contractor for Area 7 AMScott weighed up the Colas system against alternatives, opting for Repave because of its physical properties (including noise reduction), its speed and because it is more environmentally friendly. "Repave is very cost effective, especially where site constraints necessitate carriageway closures. Increased output minimises inconvenience for road users," says AMScott Design Team Leader David Gedney. "We'll be using it again before the end of the year, on four other A1 sites."



Repave involves heating the top 30mm of asphalt and scarifying the softened material before it is levelled, rolled and covered with a layer of thin surfacing

immediately adding 25mm of hot thin surfacing. Thermal bonding occurs, followed by the contractor rolling and rapidly reopening the renewed carriageway.

It is all very quick and effective. The road ends up with 50 to 55mm of high quality homogenous surfacing bonded naturally to the layers below. The road is sealed, cracks and reinstatements healed, and waste kept to a minimum. "Simplicity is the key," Harding says. That and an end product which consistently shows longevity of performance.

Much of the carriageway in Britain in need of repair is of hot rolled asphalt which has typically lost chippings and therefore

resistance to skidding; has oxidised and fretted on top; cracked and frayed around joints and/or suffered from poorly reinstated utility openings. "Often the road is structurally sound, with degradation restricted to the top few millimetres. Reworking the old material and topping this off with fresh asphalt the Repave way makes the best use of what is an existing and viable resource."

The road to be treated generally requires a degree of preparation. On carriageways where levels are not important and which can easily take an additional 25mm on top, planing takes place only to suit existing roads and junctions. Where there are lots of

existing levels to be met – for instance, where house drives exit onto a carriageway or where there are numerous road gullies – a 2m wide, 25mm channel is normally planed on either side of the road.

Repave is also ideal for 'inlays', for instance the reinstatement of slow lanes of dual carriageways which have suffered from wheel tracking (see box). Here 25mm has to come off the whole area to be treated.

"Whatever the circumstances, Repave involves the minimum of removal of planings off site," says Michael Turley. "The process offers the benefits of genuine recycling schemes, including maximum reuse of existing materials, minimal use of new materials, fewer lorry movements, less use of energy and reduced CO₂ emissions." On a recent inlay contract of 17,000m², 900t of existing material was reworked and reused. "That equates to 60 lorry movements that did not have to take place."

Analysis carried out by Colas into 10 Repave sites in the north east of England showed savings (over competitor reinstatement methods of comparable performance) of 40% in materials cost, 47% in planing and – crucially – 54% in traffic management. "That adds up to cash savings of £180,000 for the client," Turley says.

REPAVE PROCESS SPEEDED BY FAST TRAIN

Repave is carried out using a machine purpose built by Armstrong Engineering (now Marini UK) in collaboration with Colas. Up front is a large LPG 'burner' to heat carriageway asphalt to 150°C down to 30mm of depth, followed by spring loaded tines to scarify and rework the plasticised asphalt, after which comes an hydraulic screed to level the material and take out minor imperfections. Four men operate the Repave machine. Behind it travels a conventional

paver to add hot thin surfacings. Rolling completes the Repave process.

The one machine travels throughout Britain, processing up to 500,000m² a year. The Repave process can be worked virtually the year around: the Repave machine's huge heater creates a local climate ideal for laying asphalt, whatever the weather. "In winter we have only ever had to stop twice with heavy snow preventing our asphalt lorries from getting through," says Operations Manager, Recycling, Kevin Harding.