

**Analysis****Searching  
for smooth  
operators**

Picture supplied courtesy of Finn pave

**A**sphalt innovation over the last decade has helped lower road noise, reduce spray and improve skid resistance but a factor still to be addressed is surface regularity. Creating more even pavements during laying has the potential to increase a road's life span, cut fuel consumption, reduce vehicle damage and provide a smoother ride for drivers.

The Highways Agency currently assesses surface regularity using a 3m rolling straight edge, but the HA is concerned that this standard is no longer suited to modern traffic conditions.

"Traffic speeds and loadings in the UK have increased dramatically since the current standard was introduced," says HA Principal Pavement Engineer John Williams.

"Suspension movement of HGVs, influenced by profile, increases stress on localised areas within a carriageway. More even surfaces reduce the potential for damage and need for maintenance. They also create less rolling resistance so less fuel is consumed and ride quality is enhanced so driving becomes less tiring and therefore more safe."

Measuring surface profile after laying is an empirical approach and the HA is working with industry to develop more analytical methods to improve regularity. According to RMC Surfacing Director of Major Projects Richard Butterfield, quality control is key to even surfacing: "A constant supply of consistently good quality material is essential to achieve smoother results."

In Europe contractors use 'shuttle

buggies' to take asphalt from the delivery lorry to the paver to ensure continuous laying and achieve more even results. However, contracts let in the UK are generally smaller and are not suited to the large sized shuttle buggies which are currently available.

Final surface profile is highly dependent on the underlying surface so plant innovation has an important part to play. Technology which could smooth the way for more even carriageways includes laser scanning and better power control to maintain constant paver speeds.

"Laser systems, such as the Road Scanning System which is fitted to Titan machines, are easy to use and accurate," says Lafarge Project Manager Steve Tinkler. "Use of such systems make it easier to achieve better final tolerances."

The drive for smoother roads is likely to be coupled with increased use of appropriate PMB binders in all layers. "Workability will be essential to achieve smoother pavements," says Nynas Bitumen Product Support Manager Jukka Laitinen. "Greater use of PMB binders will give contractors more laying flexibility."

Bardon Contracting Consultant Bill Heather says: "Knowledge to create smoother roads does exist but clients need to start specifying profiles and reward contractors that achieve them." Hanson Construction Projects Director Denis Curran agrees and adds: "Clients should be looking to enforce strict level tolerances in every layer of the pavement to maximise the benefits."

