

Analysis

Getting a better grip

Knowledge of the benefits that modern, high technology road surfacings can bring necessarily includes an appreciation that more can be done to prevent skidding than clamping down on speed, drink and worn tyres. These three should not be underestimated as contributory factors to Britain's 5M road traffic accidents per annum. But publicity given to the latest generation of asphalts is helping concentrate minds on the actual mechanisms of skidding – fiscal and regulatory as well as physical – and what best can be done to counter these.

One or two basic facts first. Some 35,000 deaths and serious injuries are suffered in RTAs in Britain each year. Nevertheless, statistically this country has among the safest roads in Europe. New tyres sold with 7mm of tread and, on a new road surface, it is reported they can stop a car travelling at 60MPH in less than 50 metres.

This standard of performance is undoubtedly much higher than the British mean distance for getting a vehicle stopped. Much has been done by the automotive industry in general to improve chassis/suspension/braking performance, and by the tyre sector to optimise its products' contribution to performance at the tyre/surface interface.

Increasingly the spotlight is upon road surfacings where there have also been real improvements in materials over the last decade, in terms of spray reduction and quiet running as well as improved friction at relatively low cost; and where there is the potential for more to come. Developments in 'negative texture' surfacings (where vehicle

tyres press down into hollows rather than achieve grip via the protruding aggregate of 'positive texture') have largely been welcomed by end users and the public alike (see below).

The issue of surfacings goes beyond materials technology, however. The measurement and governance of the skidding resistance of road surfaces come into the equation too, and here there is room for improvement. The National Road Maintenance Condition Survey with its skid resistance indicator provides a statistic for the overall skid resistance condition of the principal road network. This gives a measure against which particular sites can be gauged; but is not directly related to the risks of accidents occurring. It needs to be.

The Highways Agency's skid resistance standard for national roads was reissued in August 2004 in the agency's 'Design manual for roads and bridges' (see Volume 7: Part 1, Section 3: Skid Resistance). The standard relates the level of wet friction of the road surface to the risk of wet skidding accidents; and was already seen on reissue as being in need of revision.

The view was that the standard had not changed significantly since first being established in the 1980s, but that roads' construction had. Mindful of its targets for accident reductions, HA decided to review the standard and commissioned TRL to undertake fresh accident analysis of the English principal roads network. TRL recommends substantial changes in its report published this summer.

TRL622: 'Accidents and the skidding resistance standard for strategic roads in

England' also contains analysis to 'estimate the financial costs and benefits that would accrue as a result of changing the skidding resistance standard...in line with recommendations in this report.' It concludes that costs (of resurfacing, traffic management, road user delays) would be recovered in the financial value of accident reductions.

Two things are implicit in TRL's report: that much more money is needed up front for surfacing improvements to provide better skid resistance; and that materials technology already available, plus the knowledge to apply it, are fit for the purpose. This last is revealing and important.

While end users and the general public rate highly 'quiet asphalt' – ie modern negative texture surfacings – some disquiet has been expressed in the media about skidding on freshly laid thin layers, particularly SMAs, in the dry. It has always been true that some newly laid asphalts (including HRA) have a lower skid resistance than after traffic has used them for a while. But best practice guidelines exist on the friction characteristics of asphalt shortly after being put down.

The sponsors of Modern Asphalts, for example, are well aware of the performance of their products and can provide expert guidance on newly asphalted surfaces, as on all other aspects of asphalt road construction.

(Credit: 'Get a grip: Tyres, road surfaces and reducing accidents: a review'; published by the AA Motoring Trust and the County Surveyors' Society.)