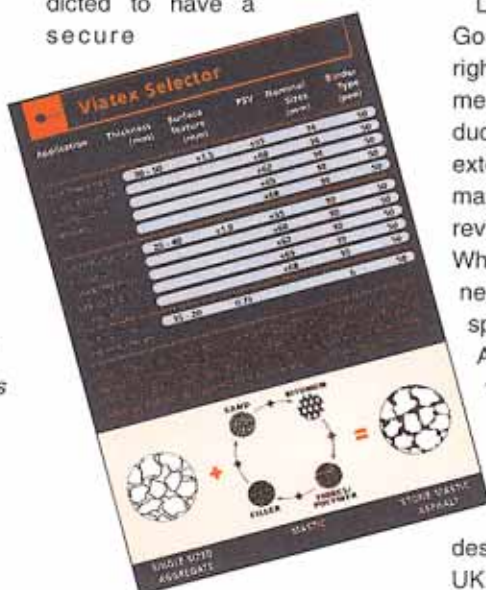


# RMC's SMA winner

**In developing its own thin overlay, RMC has adapted a material originally developed for the German market and re-engineered it to meet the specific needs of the UK.**

A material which holds out the promise of durability for heavily trafficked high speed and urban roads allied to improved resistance to wheel tracking and which can smoothly surface rutted or uneven roads in thin layers could be predicted to have a secure



RMC's Viatex Selector shows the available variations of mixture.

future. Add in benefits such as reduced noise and wet weather spray characteristics and it sounds like a market beater.

That is what RMC reckons it has come up with in Viatex, its recently launched stone mastic asphalt alternative to hot rolled asphalt. "We are confident that we have produced a quality product which will provide a surfacing solution for a lot of sectors of the market," says RMC Aggregates' Marketing Manager Ian Southcott.

"We have taken a material which

is well known in Europe but previously little used in the UK, and invested a lot of time and effort in developing a product specifically to meet the technical needs and market conditions of the UK. We have gone right back to examining SMA in engineering terms."

The timing seems to be right. Stone mastic asphalt is increasingly recognised as a material with potential applications in the UK. It has in fact been used extensively in Germany for many years and various other countries.

RMC stresses that it did not simply bring a German product into the UK with a few modifications for local conditions.

Divisional Technical Manager Gordon Lemon explains: "We went right back to engineering fundamentals when we decided to produce our own SMA. We carried out extensive research into what the material is and fundamentally reviewed what had gone before. What we have come up with is a new approach to SMA design specifically developed for the UK."

All the available literature, most of which was German, described a cooking book, recipe based approach. There were little design criteria available to use. So RMC developed a design method applicable to the UK.

Lemon says: "We quickly realised that SMA did not obey the normal rules of design for macadam mixtures or rolled macadam wearing courses. For example, to increase the binder content in an SMA you need the grading to be more open, whereas in a macadam you have to make it finer. There is nothing in the literature about this."

The development process started some four years ago. "We went from trial to operations very quickly," Lemon says, "it was a very steep learning curve from initial funda-

mental research to operations. After having the trial section down for a year we realised that not as much was known about SMA as people imagined.

"We have learned a lot, some of which we think might interest even Germany where it has been used for so long."

Lemon does not want to give too much commercially sensitive information away but suggests that German engineers might be interested in looking at using higher PSV stone and also Viatex's developments in macro texture.

The end product is comprised of aggregate, crushed rock fines, fine sand, filler, bitumen binder and cellulose fibres or a polymer as stabilisers to prevent binder migration.

Viatex has a stable aggregate skeleton bound with a mastic from these ingredients. The mixture is designed to minimise air voids for durability. When laid, it provides a dense impervious layer with an open surface texture.

High PSV aggregate can be specified to increase skidding resistance. Benefits include high defor-



Viatex being laid to form a durable, safe sur-

mation resistance, high durability and resistance to age hardening thanks to low void content and thick binder film, which also gives resistance to premature cracking and moisture damage.

Viatex compresses very little during compaction so it can be used over rutted or uneven surfaces. The reduced noise and wet weather spray characteristics come as a result of the inverse surface texture which is produced by the screed of the paving machine.

Most UK high speed roads have a 1.5mm texture requirement, but RMC says using traditional design methods does not guarantee that texture will be achieved by an SMA. It took RMC two years of work to develop its new SMA to the stage where it can be certain of achieving the required textures.

Particular attention was paid during the fundamental review to selection of aggregate proportions.

"This is one of the keys to a good SMA product," says Lemon. Development work was carried out mostly at RMC's central laboratories at Bromsgrove and at plants around

the country. The NAMAS accredited facility is one of the few of its type to contain a segregated roller compactor. This enabled specimens to be tested in as close a reproduction of real life conditions as possible in a laboratory.

Lemon says: "It was a good means of ensuring that we were getting the texture right."

Viatex is available in various thicknesses and surface textures (see Viatex Selector diagram). For high speed roads a 30-50mm band is suggested, 25-40mm for urban roads and 15-20mm for low trafficked roads and industrial sites.

The binder rich surface of Viatex benefits from having a light layer of coated grit spread on it when freshly laid in areas subject to braking or turning traffic to counter any reduction in skidding resistance in the first few weeks after application.

"SMA is taking off due to the need for materials which are easy to lay, can be used on poor profiled surfaces and can be laid economically without using precoated chippings," says Ian Southcott.

Urban renewal is likely to provide



RMC Surfacing operatives doing a good job.

the biggest market for Viatex, but RMC says the material can provide a solution for any market sector.

"We are finding it popular with shared drives to houses. It is the best bituminous material for withstanding the effects of power steering and of hot weather. It is very resistant to wheel tracking from industrial vehicles, so it has a big potential in industrial sectors."

Ease and speed of laying mean Viatex is an economical product, with only a five man gang needed. Compaction is important with any SMA and RMC suggests use of a tandem steel wheel roller of six to eight tonnes without vibration. A three point roller is used for final rolling and to cut the joint. "Viatex is more expensive than HRA to buy, but savings made on laying it more than make up," concludes Southcott.

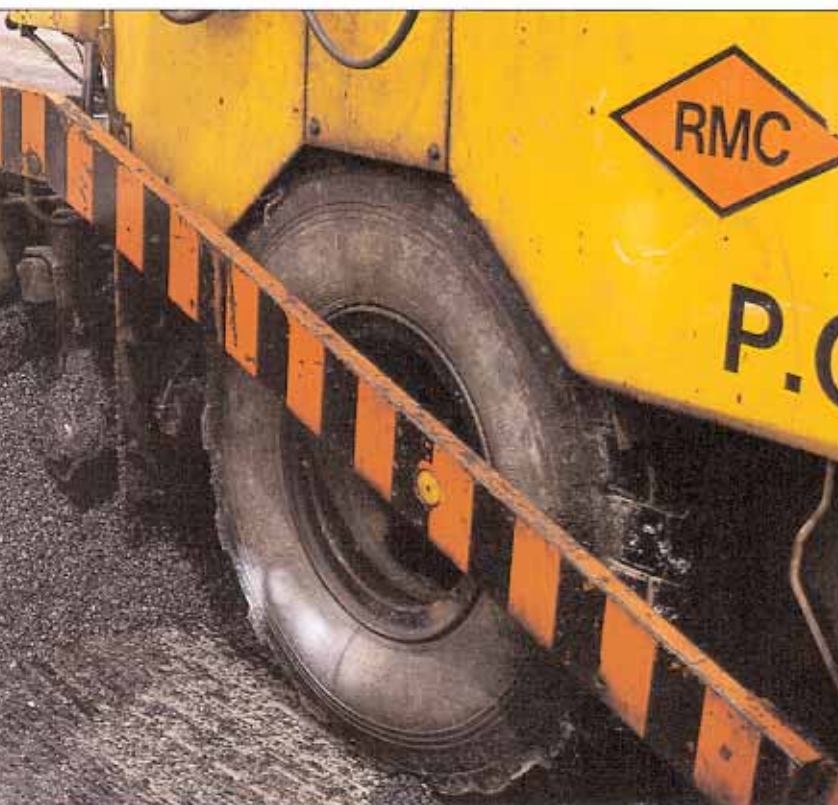
## An approach to SMA design, specific to the UK

### UL-M comes to RMC

RMC Aggregates is to produce and market leading thin surfacing process UL-M, after signing an agreement with Jean Lefebvre (UK) Limited, a subsidiary of Enterprise Jean Lefebvre.

The Highways Agency -approved product has proven to be a low noise/high skid resistance alternative to conventional road surfacing techniques, with the added benefit of the need for planing and iron works adjustment significantly reduced.

RMC's Marketing Manager Ian Southcott commented: "RMC's plant network, technical support and contracting capability will add considerably to the continued growth in the use of UL-M in the UK." The seven RMC companies included in the agreement are the six regional Roadstone companies in England and Wales plus Scottish Aggregates Ltd.



ing to an urban road.