

Hanson

When thin surfacings were introduced to the UK they were expected to show major benefits over traditional wearing course materials. Now, however, specifiers may be losing out, says Chris Curtis of Hanson Quarry Products Europe.

Do not lay thin surfacing too thick

Thin surfacings were introduced to the UK as part of a joint producer/Highways Agency drive to develop innovative materials appropriate to a changed approach to road procurement and ever increasing traffic. For surface course materials, there were the additional demands of low noise, good skid resistance and high quality ride.

To encourage innovation the materials had to be proprietary, but to ensure fitness for purpose, certification by the Highways Authorities Product Approval Scheme (HAPAS) was a requirement of the specification. Clearly, the expectation of all parties was that thin surfacings would show a number of benefits over existing surfacing materials - in particular Hot Rolled Asphalt (HRA) wearing course. Many of these benefits are being lost, says Chris Curtis, head of product technology at Hanson Quarry Products Europe.

These proprietary products were purposely designed to be thin, but, increasingly, so-called thin surfacings are regularly laid at thicknesses of 40mm or more.

Thin surfacings use high quality aggregate and some form of modified bitumen and are therefore relatively expensive to produce compared with traditional HRA. However, laying them at thicknesses of 20-30mm – as some were designed to be laid – results in value for money, not increased costs. So why are these expensive products, in some cases, being laid at the same thickness as cheaper, traditional materials?

Most engineers wishing to use thin surfacings require conformance with Highways Agency Specification for Highway Works Clause 942 – and use the corresponding Notes for Guidance for advice on selection and use.

When proprietary surfacings were first developed, the Highways Agency was keen to avoid being prescriptive. The guidance reflects that, stating simply that the surfacing "shall be laid at a nominal depth of less than 40mm". However, it adds: "maximum and minimum thicknesses" should only be specified "when there are specific reasons for doing so".

It is this last statement that could – some producers believe – lead specifiers to opt for thicker layers than they need to, as it is accompanied by a list of reasons why a minimum or maximum thickness should be specified.

Possible reasons for minimum thickness include: to maintain continuity with material to be planed out, to avoid premature cooling in adverse weather, and to provide a structural contribution.

Maintaining continuity with material to be planed out is also given as a possible reason for specifying a maximum thickness. However, Curtis fears the guidance might be seen as encouragement to plane out the existing 40mm HRA wearing course, whatever its condition, and replace it with the equivalent depth of supposedly "thin" surfacing.

His fears might be well founded, as even the Highways Agency accepts that it is not all that simple to plane out the top 25mm or 30mm of a wearing course, and often it is easier to take out the entire layer.

"Why not overlay?" says Curtis. "That was the original intention of thin surfacing - as a maintenance overlay when the surface texture is worn out or it is starting to crack".

He also believes specifiers could be confused by the reference made to providing a structural contribution. "Thin surfacings were never designed to provide a significant structural contribution", he explains. "Structural strength depends on the total thickness of asphalt, not just the surfacing."

Adverse weather conditions were a serious con-

cern when these proprietary products first came on the market. Thermoplastic-based materials have to be laid at high temperatures, and there is a danger of premature failure if they lose heat too quickly and are consequently under compacted. The Highways Agency guidelines recommend specifying a thicker depth if surfacing is carried out in the winter.

However, Curtis says: "These are proprietary products. We have spent a lot of money developing them and getting HAPAS approval for them. We know how they perform and how to lay them, so surely when it comes to weather, the decision should be ours".

Like many other suppliers, Hanson has two products approved as "thin surfacing". One – described by Curtis as a "true thin surfacing" – is based on blended aggregate sizes bonded by a modified binder, and is designed to be laid as thinly as possible.

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The second is derived from stone mastic asphalt, and has a matrix of coarse aggregate with the voids partially filled with a mastic mortar. It works best when laid at thicknesses of 30mm to 40mm.

"They are two different materials and there are benefits to each of them," says Curtis. "But specifiers need to be aware what they are specifying and why."

DBFO and partnering give contractors the chance to discuss and agree the performance requirements for the road pavement, the surfacing and the best product for that set of circumstances can then be supplied.

In traditional procurement situations, Hanson and its competitors are often asked simply to price on the basis of a specified thickness of surfacing. This request ignores the benefits of the individual proprietary products and could result in an expensive material being laid to an unnecessary thickness, or a better product being ignored altogether because it is not appropriate to lay it to that depth.

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1. Chris Curtis is head of product technology at Hanson Quarry Products Europe

2. Thin surfacings – such as Hanson's Tuffgrip – use high quality aggregates and modified bitumen

3. Tuffgrip was recently used to resurface a section of the M5