Hanson

Excellent skid resistance is achieved by specifying high PSV aggregate and providing adequate texture. But use of the premium material needs to be managed to ensure supplies well into the future.

Managing the demand for safety

Safe driving on Britain's roads is becoming ever more crucial as traffic levels continue to rise in many parts of the country. Modern thin surfacings providing a high level of skid resistance can help reduce the frequency of accidents and with it the number of hold ups which so infuriate motorists.

Hanson Aggregates understands this fully – hence the development and successful marketing of its Tuffgrip high performance thin surfacing. Head of Product Technology at Hanson is Chris Curtis.

Curtis points out that for a road to demonstrate high levels of skid resistance, it has to have a surface course with aggregate that is resistant to polishing and a matrix which displays an adequate degree of texture.

"Highway clients know that when they are looking for a particularly safe running surface which demonstrates both these attributes, they need to ensure that the aggregate is specified as a high PSV stone – that is, an aggregate of high resistance to polish," Curtis says.

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>
> **Chris Curtis.**

High PSV stone has also to have a consistent grading and shape and thin surfacings such as Tuffgrip containing such aggregate retain their texture over a long period of time. Tuffgrip, for example keeps a texture above 2mm and demonstrates a good long term retention, even under heavy trafficking by HGVs.

Tuffgrip's performance is achieved through use of Hanson's own stocks of high PSV aggregate. Such premium material tends to be located to the west of Britain, from south west England, through Wales, Northern Ireland and north western Scotland.

Hanson has quarries is these regions and therefore possesses comparatively easy access to adequate supplies of stone with a PSV above 60 – a value which gives a road a good level of skid resistance even in the wet, and which is increasingly popular with specifying authorities.

But Curtis warns that national supplies are not infinite and a degree of care needs to be taken to maximise best use of the stone that is quarried. At the present time, with the increasing demand for high performance thin surfacings, there has been an increasing call for high PSV aggregate of 14mm and 10mm size.

"These sizes cannot be produced in isolation and the trick is to make good use of the other sizes," he says. Hanson has looked hard at using smaller grades of aggregate such as 6mm and has subsequently developed a version of Tuffgrip which demonstrates exceptionally quiet running properties and maximum skid resistance at low speeds.

Its texture makes Tuffgrip ideal for use within speed restricted areas in cities, towns and villages. "It also helps sustain resources of 14mm and 10mm high PSV aggregate by making good use of previously unused high PSV material," he says.

Hanson is thereby doing its best to promote sustainability of what is a premium resource. Curtis makes the point that the specifiers of roads materials

can also contribute to extending high PSV sources.

He says that some highway clients are effectively over specifying high PSV material in the belief that the higher the value of the stone, the safer the road. "There is no real advantage to be had from specifying an aggregate with a higher PSV than stated in the Highways Agency specification HD36/99 and there is no evidence that using a higher PSV will lead to a safer road," he says.

The specification determines what the Highways Agency considers to be the correct PSV of aggregate needed for many different types of road. Its findings are based on a risk rating and considers, among other things, the number of vehicles which use a road.

Supplies of high PSV aggregate can be more carefully managed by – for instance – customers asking themselves whether what they are ordering is truly what they need, adds Curtis. Hanson is helping its customers by offering to liaise closely with them prior to an aggregates purchase.

Raw material with a high PSV is verified as such with a test that determines an aggregate's resistance to polish. The PSV Test, as it is known, is far from perfect and has been criticised in terms of accuracy, says Curtis. But recent research has failed to find a better means of testing aggregate to find its resistance to polish.

He adds: "There are those who seek to amend the measure of PSV based on road performance. However, research body TRL has not considered this approach and the Highways Agency has not deemed it necessary to amend its HD 36/99 specification."

Curtis adds that any current discussion on skid resistance has to include the phenomenon of dry skidding. "Concern has been expressed about the binder on a freshly laid surfacing which can act as a lubricant under the friction of a locked wheel.

"The thicker binder films on modern thin surfacings may provide slightly more lubricant. However, the level of skid resistance achieved on these surfacings is still above that required for wet road conditions.

"The topic of skid resistance remains as interesting as it is controversial. As long as interest is maintained, then the competence of thin surfacings in terms of their safety is unlikely to be forgotten."

1: **A successful application of Hanson Tuffgrip at the Second Severn Crossing.**

2: **Use of high PSV material needs to be carefully managed to ensure supplies well into the future**

3: **Hanson Tuffgrip incorporates a high PSV aggregate to give a road a suitable degree of skid resistance.**

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