



Low Energy Asphalt was piloted in Staffordshire in October last year, since when the county council has adopted the material for its maintenance programme

Market grows despite setbacks for low temperature asphalt

Government funding cuts have delayed the Carbon Trust's hopes for promoting 'warm mix' asphalt, but a market for low energy materials is developing all the same.

Staffordshire County Council (SCC) has no qualms whatsoever about using the relatively new technology of Low Energy Asphalt (LEA) for its 2011/12 highways capital works programme. The authority's resource manager Chris Balance says exact figures cannot be given, but he fully expects to be buying "tens of thousands of tonnes" of this type of material this financial year.

As a statement of confirmation, this would appear to show SCC and its highway maintenance supply chain have stolen a march on others hoping to substantially reduce energy expended by UK asphalt production.

A series of projects sponsored by the Carbon Trust (CT) and aimed at building a market for low temperature asphalt was announced in March last year (see box). But Government cuts to CT's budget have stalled the 'Industrial Energy Efficiency Accelerator' scheme. Companies involved still await funds for associated material and plant technology pilot projects.

Meanwhile, SCC, its highway maintenance 'partner' Enterprise, the asphalt supplier Midland Quarry Products (MQP) and Petroplus Bitumen have continued with their efforts to get LEA produced and laid in bulk.

All four parties can take an element of

the credit. Petroplus imported the license for the French LEA process and MQP has invested a six figure sum in asphalt plant modifications and materials testing. "It was Enterprise's initiative to bring LEA into Staffordshire," says SCC's laboratory testing manager Phil Cartmail, but SCC also should be commended for accepting the technology in rapid fashion. The first trial use of LEA in Staffordshire was in October last year.

"As one of only a few local authority asphalt laboratories left, we were confident of being able to take on the risk of the new material, albeit a very minimal risk," Mr Cartmail says. "LEA >

> is entirely compliant with the EN1308 standard and the only difference (between LEA and hot mix asphalt) is its novel way of adding water.”

Petroplus is keen to stress that LEA ‘is a process technology, not a product’. Sequential foam mixing is essentially the manufacturing procedure, which produces asphalt generally regarded as ‘semi warm’ in the temperature range of 80-100°C. This compares to hot mix temperatures of 160-180°C and warm mix of 120-140°C.

It is claimed that LEA reduces fuel consumption and carbon emissions from asphalt production by 50%. Materials produced are like for like replacement for conventional hot mix asphalts, although only for base and binder courses at present. The technology has not yet been applied to surface course mixes.

Nonetheless, Chris Balance says: “We will be buying LEA materials wherever they are price competitive with AC20 and AC30 hot mixes. MQP is not charging any more or less than for these standard materials. So LEA will be favoured as long as the particular site is within range of MQP’s supply; generally all but northern parts of the county.”

According to MQP managing director Simon Willis, his company has already supplied about 5000t of LEA to Enterprise and SCC this year. Creating a market is a challenge he says, although MQP is performing LEA trials for Amey in Birmingham and for Walsall, Sandwell and Dudley borough councils later this year.

“We are trying to do all we can to



Materials produced to the Low Energy Asphalt process are like for like replacements for standard base and binder courses. The technology has not yet been applied to surface course mixes in the UK

drive down the carbon footprint of our operations. Of materials used in asphalt production about 70% is oil including fuel burned in the process. After looking in detail at all the options we decided lower temperature asphalt is the best way to go,” Mr Willis says.

“We also offer cold mix within our product portfolio, typical of most suppliers, but whereas with cold mix we believe we could replace about 40% of hot mix materials, LEA replaces 93% with the same product codes and descriptions. Cold mix would achieve a greater reduction of CO₂ but that’s no use if you cannot use the stuff. This may be different in 10 years time, but for now the industry is conservative and for us LEA is the way to go.”

The same process has been adopted by others. Hanson, for example, is

marketing it as ‘era’. Tarmac, as asphalt contractor to Amey in Birmingham, will also get opportunity to observe LEA in practice. “The process technology is available to anyone who wishes to license it, regardless of whether they buy bitumen from Petroplus, providing they operate to the necessary quality assurance standards. We do not want to restrict its use,” says Petroplus marketing director Gareth Evans.

“There is no pressure on people to change their procurement preferences, which is why LEA stands a good chance of eclipsing all other technologies. It wins all ways in terms of technical performance, energy and carbon saving and most importantly commercial flexibility.”

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Energy Efficiency Accelerator scheme on go slow

Funding of £700,000 was announced by the Carbon Trust (CT) in March last year for three projects to reduce energy consumption in asphalt production, through CT’s ‘Industrial Energy Efficiency Accelerator’ scheme. This included £275,000 for Tarmac, Atkins, Nynas and the Mineral Industry Research Organisation to demonstrate half warm and cold mix asphalt with the aim of securing Highways Agency approval.

Aggregate Industries (AI) would receive a £195,000 contribution for piloting a heat recovery system at its Haughmond Hill plant. United Asphalt, Shell Bitumen and

Berkshire Engineering would get £237,000 for a project aimed at recycling asphalt planings in warm mix by combining Shell WAM Foam with an aggregate dryer.

According to AI’s carbon manager Paul Taylor, its project is currently not progressing since CT’s funding was withdrawn. But United Asphalt is progressing with its scheme despite no funding.

United Asphalt would be combining established technologies. “Shell WAM Foam warm mix asphalt has been around for some time, as has the aggregate dryer.

There’s nothing new about either. Combining them is key,” says United Asphalt managing director Ross Snape. “Acceptance by the Highways Agency and industry takes time. We need to match existing standards as much as possible, but it’s not being done at present. We are increasing the amount of RAP in hot mix asphalt because we can do this.

“At this moment the installation of the new dryer technology is on hold pending further discussions with the CT and potential funding from the Regional Growth Fund.”