Hanson tackles air pollution with reduced emission asphalt

Hanson has launched a new range of reduced emission asphalt (REA) which lowers harmful air pollutants produced during production and paving by an average of 40%. For authorities in dense urban areas, this is another tool to help fight peaks in poor air quality.

“There are pressures currently with air quality in London, and in other cities," said Adrian Hadley, head of technical (asphalt) and aggregation at Hanson. "We saw this as an opportunity to help and support not only our direct customers – the contractors – but also local authorities and road users."

According to King’s College London, one area in Vanwall, London had already exceeded yearly limits set by the EU for PM10 (particulate matter) by the end of February 2020. In such locations, any additional pollution from roadworks increases the risk to public health.

In a bid to reduce air pollution, London imposed an ultra-low emission zone (ULEZ) where drivers of all the cleanest vehicles must pay a daily charge – in April 2019. It may extend the zone to Greater London by 2021, with Birmingham and Leeds planning to introduce similar zones this summer, and Greater Manchester looking to phase in a similar approach from 2021.

Working with Spalt Reusner, which developed the FreshAir additive which goes into REA, Hanson carried out two trials in London in Summer 2018, one on a road close to a primary school, the other adjacent to a wildlife park and playing field.

“We now have other sites that we are about to supply to,” said Hadley. “We are working with some key contractors in London and two of three London Boroughs who are interested in using REA.”

Shell launched its FreshAir additive, which it supplies to Hanson already mixed into the bitumen, last year. Following trials at the UK, the Netherlands, France, Thailand and Hong Kong, Hanson’s project formed part of the trial process. The trials demonstrated that FreshAir reduces emissions of nitrogen oxides, sulphur dioxide, volatile organic compounds (VOCs), particulate matter at 2.5 and 10 microns and carbon monoxide by up to 40% compared to conventional asphalt.

REA can be used in conjunction with other bitumen technologies, such as polymer modification or other additives. "There are no restrictions and it can be combined with the entire product range that we supply," said Hadley.

The combination of REA and Hanson’s warm mix technology EMA (energy reducing asphalt) is likely to be an attractive proposition said Hadley. "If we combine the low-carbon effect of our energy reducing asphalt with the reduced emissions from REA, that really is a win-win," he said. Using warm mix reduces some times and costs, but it does not cut specific gases and particulates or minimise their release into the air during production and paving. Hanson could supply REA from any one of its 16 UK plants. The UK team is also talking to colleagues in North America, Australia, India, and Malaysia about the new technology.