

**“Playing a part in the delivery of the world’s first electric bond coat sprayer has been incredibly exciting for the team, and further demonstrates our commitment to supporting the delivery of net zero targets.”**

Phil Greenin, framework delivery manager at Tarmac

**Planet**

**NET  
ZERO**

## Climate Action

### Electric Bond Coat Sprayer

In 2023, Tarmac brought an electrically powered bond coat sprayer to roads in the UK in a world-first project to support our transition to net zero.

Tarmac supplier and highways equipment specialist, DE Plant, part of the Thriplow Group, developed the all-electric vehicle, which is the first of its kind and demonstrates the next-generation technology which could replace its diesel-powered counterparts, offering huge carbon savings alongside on-site safety benefits.

Bond coat sprayers are used to distribute a thin layer of heated bitumen, sprayed between layers of asphalt, to bind them together when laying a road. Tarmac and DE Plant have partnered with Volvo and Schäfer-technik to develop an all-electric, zero-emission sprayer, which offers carbon savings of 1.12kg CO<sub>2</sub>e/km – equivalent to driving 6,000km in a diesel car.

The electric sprayer was used for the first time on the A120 in Essex. The sprayer was then set to service the area surrounding the M25 and help contractors to cut carbon emissions on road surfacing projects across East Anglia and the Southeast.

DE Plant worked with Volvo to develop the chassis, benefitting from the automotive manufacturer’s expertise in developing electric vehicles in Europe. Schäfer-technik, custom construction machinery manufacturer, has developed the specialist tanker, sprayer and nozzles.

As part of the project, Tarmac also worked with BituChem to develop a new product to replace traditional bitumen. In the absence of a diesel generator to keep the bitumen warm and ready for spraying, the company’s Bondcoat Duo was created to be used as a cool product, enabling the battery’s energy to be conserved since there is no requirement for hot material on site. National Highways has approved the use of Bondcoat Duo on the strategic road network, which has the potential to offer further carbon savings if used by existing



bond coat sprayers as there would be no need to use diesel to heat the product for use.

The electric bond coat sprayer has a 200kw battery pack installed, which can be fully charged in two to four hours depending on the charge connection and has a range of almost 100 miles per charge.

Scott Emmett, founder and CEO of Thriplow Group, added: “Thriplow Group has prided itself over the years in setting the standards for bond coat sprayers. Running a fleet of the newest, most technical, and safest vehicles in the market still wasn’t enough for us.

“We are proud to have been able to work with our long-term partner Tarmac and National Highways to be able to bring this project to market. Being the world’s first all-electric bond coat sprayer demonstrates how a collaborative approach can really work to change the operation when others said it couldn’t be done.”

Steve Elderkin, director of environmental sustainability at National Highways, said: “Reaching net zero highways is going to require big thinking, ongoing innovation, and the continued development of low-carbon technology and materials.

“The environmental challenges we face can only be achieved by working together. It’s great to see Tarmac and DE Plant doing that – an example of partnership working within the field resulting in a new technique being introduced on our road network.”