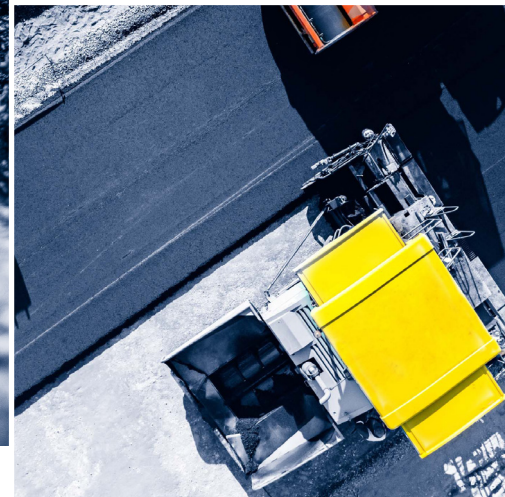




CASE STUDY

Swinton Bridge Industrial Estate

Mexborough



Application Opportunity

White Lea Road and Marriot Road serve the busy Swinton Bridge Industrial Estate in Mexborough. Both carriageways experience high volumes of heavy vehicular traffic, resulting in significant surface wear and fatigue under extreme load conditions.

The asset owner, Rotherham Metropolitan Borough Council, required a robust, durable asphalt solution capable of withstanding the slow-moving, scrubbing action of heavy vehicle tyres, a demand that conventional surface courses struggle to meet over the long term.

Recommended Product

SteelSurf ECO+ was specified as the ideal solution. SteelSurf is engineered to maintain surface stability under the punishing conditions typical of heavy industries — coal, electricity, ports, sugar manufacturing — and is equally trusted by local authorities at road intersections, industrial estates, and roundabouts.

More Info



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The ECO+ formulation incorporates MacRebur MR6, a polymer-enhancing additive derived from end-of-life plastics. This acts as a direct replacement for virgin polymer in the production of PMB and is dry-mixed at the asphalt plant with no additional infrastructure required. MR6 delivers a carbon saving of 11.32 kg CO₂e per tonne of asphalt produced. This innovation, reinforces our commitment to circular economy principles without compromising performance.

Results and Benefits

800 tonnes of SteelSurf ECO+ were successfully laid across 7,000 m² of White Lea Road and Marriot Road at a 40 mm layer thickness — incorporating approximately 678 tonnes of recycled steel slag. The material's exceptional resistance to deformation ensures the surface will withstand the most demanding traffic loading for years to come, reducing whole-life maintenance costs for the asset owner.

Carbon Data

| SteelPhalt Products | Carbon footprint Kg CO ₂ e/tonne | Average Surface course Kg CO ₂ e/tonne | Carbon Benefit Kg CO ₂ e/tonne | Carbon Benefit % |
|---------------------|---|---|---|------------------|
| SteelSurf Eco+ | 38.88 | 74.5 | 35.7 | 48% |

* Value based on SteelPhalt verified EPD tool

Producing one tonne of SteelSurf ECO+ generates 38.88 kg of CO₂e — the carbon embodied in the materials and processes that go into making the product. To put that in context, a conventional natural aggregate surface course produces 74.5 kg CO₂e per tonne to achieve the same result. That difference, 35.7 kg CO₂e saved for

every tonne laid, is carbon that is not released into the atmosphere simply by choosing the right product specification. Across this project, with 800 tonnes installed, that represents a total saving of approximately 28,560 kg CO₂e; 48% less embodied carbon than its conventional equivalent, meaning nearly half the carbon footprint, with no compromise on performance.

What does this mean? Carbon data measures the greenhouse gas emissions, expressed in kg CO₂e per tonne, embodied in the production of one tonne of asphalt mix. The lower the number, the less carbon is released to produce the same amount of material. The Carbon Benefit shows how much less carbon SteelSurf ECO+ MR6 generates compared to a conventional surface course doing the same job.

Conclusion

This job demonstrates that high performance and low carbon are no longer trade-offs, but can be delivered in a single, optimised solution.

Faced with a challenging environment where slow-moving, heavy traffic accelerates wear, Rotherham Metropolitan Borough Council required a surface capable of resisting rutting, deformation, and premature failure. SteelSurf ECO+ MR6 was selected precisely for this reason.

Its recycled provides exceptional strength and interlock beyond what natural aggregates can offer, while the MacRebur MR6 additive ensures PMB-grade performance without the carbon burden of virgin polymer production.

The outcome is a longer-lasting, more resilient road surface that reduces maintenance needs and extends asset life. At the same time, it achieves a 48% reduction in embodied carbon compared to a conventional surface course.