

SmartSander[®]

by Unipart Rail

Improves adhesion performance by applying sand to the rails



Deposits sand automatically in
all brake steps

Variable delivery rate

Automatic sanding in traction

Complements modern defensive
driving techniques

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SmartSander® is an on-board automatic system with the ability to deliver a variable amount of sand according to the level of adhesion, train speed and brake demand.

High leaf and rain fall cause delay minutes, wheel turning costs, station over-runs and SPADS. In 2017 GB Rail Services were delayed by over 350,000 minutes due to low adhesion conditions, valued to cost over £300m per annum.

Heavy rain or leaves on the line have an adverse effect on adhesion, reducing performance. SmartSander® improves performance through by applying sand direct to the rails. SmartSander® is proven to provide up to:

- 73% reduction in wheel slip incidents
- Average 30% reduction in delay minutes
- Station over-runs reduced by 70%
- 65% reduction in wheel turning due to wear and tear

The fitment of SmartSander® substantially reduces the problem leading to:

Improved Performance

- Reduction in delay minutes
- Improved wheel-turning through reduced flats
- Fewer station over-runs

Increased Safety

- Reduction in the number of SPADs
- Improved driver confidence
- Reduction in wheel-slide incidents

Cost Reduction

- Proven to reduce operating costs
- Early return on investment

SmartSander® (1 cab) consists of:

- 1 x Control Unit
- 1 x EP Valve Unit
- 2 x Sand Valve

The sanding system's intelligence comes from the control unit that monitors the brake step, traction demand, WSP activity and driver's request. The system then activates a combination of Electro-pneumatic (EP) valves to deliver the correct rate of sand.

Cost Savings

SmartSander® complies with the Rail Group Standard GM/RT2461.

A study carried out by the Adhesion Working Group (AWG) using Thames Trains C1165 stock showed that only 2% of low adhesion events when braking occurred in full service or emergency brake applications. A further study of automatic sander fitted stock showed a 25% improvement in delay minutes, 2% in braking, and 23% in traction.

Using values of 25,000 delay minutes per year, and an inner suburban cost of average £80/minute of delay, it can be estimated that on a sample fleet of 100 units the automatic sander will pay for itself in 2 years.

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