

# SmartSander®



## ADHESION SOLUTION

SmartSander® is an on-board automatic system unique in its 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 2005, it has been estimated that over 230,000 delay minutes were caused by adhesion problems.

Heavy rain or leaves on the line have an adverse effect on adhesion, reducing performance. SmartSander® improves performance through by applying sand 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

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A SmartSander® installation (1 cab) typically consists of:

- 1 x Control Unit
- 1 x EP Valve Unit
- 2 x Sand Valve
- 2 x sand hopper
- 2 x delivery hoses
- 1 x drivers button
- 1 x circuit breaker
- Air piping
- Cabling & Conduit

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.

#### Enquiries & Support

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## COST SAVINGS

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

SmartSander® deposits 2kg per minute of sand when in full service brake or during an emergency brake application.

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.

- **KEY FEATURES**
- **Deposits sand automatically in all brake steps**
- **Variable delivery rate**
- **Automatic sanding in traction**
- **Complements modern defensive driving techniques**



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