

## APPLICATION REPORT



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# **Largest rail sand filling operation in Europe increases operational efficiencies**

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## Schenck Process MULTIRAIL SandPiper pneumatic conveying system enables re-location of overnight fleet servicing for major train operator.

In March 2013 Schenck Process completed Europe's largest installation of a sand filling depot for Network Rail at the Selhurst Field sidings location in south London with sixteen MULTIRAIL SandPiper units. The installation is adjacent to the existing Southern Trains Selhurst Depot sand filling station which has been used for over 10 years for the re-filling of sand on the fleet of trains to aid the braking system and give extra traction in poor weather.

The need for the recent installation by Southern Trains was to accommodate the extra passenger trains that were previously serviced overnight at London Bridge station. Due to space restrictions the trains are now moved to Selhurst Field sidings to be cleaned and brought back into service within a short turnaround time. One of the issues that the relocation of the servicing operation needed to tackle was the refilling of the train's sand boxes.

Recent well publicised incidents of trains over-shooting stations due to inadequate amounts of sand to aid the braking system highlighted the importance of having a reliable and fast method of replenishing each of the sand boxes. The previous experience of Southern Trains of using the automated pneumatic conveying system of dispensing sand from a central silo directly to the trains provided a suitable solution to resolving this issue.

The Schenck Process MULTIRAIL SandPiper pneumatic conveying system works by having a central storage silo and pressure vessel that pumps sand to trackside dispensing vessels. A petrol pump style nozzle is placed into the sandbox and a quarter turn lever allows the sand to flow smoothly at a rate of 15 l/min. To avoid spillages the flow automatically switches off once the sand has reached the level of the nozzle. This shut-off function allows several dispensers to be working at the same time using one operator which saves a considerable amount of time and cost.



Selhurst Field sidings  
Sand Filling Station

Dispensing Nozzle  
and Dome Valve® Controller

The recent installation at Selhurst Field sidings, which was supervised by Network Rail, had 16 separate sand filling stations supplied by a single 10 m<sup>2</sup> buffer storage silo. The new silo is fed via a pneumatic pipeline from the existing system enabling a single delivery point for the sand to be maintained on the depot site. Beneath the silo is a pressure vessel that controls the flow of material to the individual pumps. The material flow in the pipeline is controlled with a Schenck Process patented Dome Valve®. The valve has a unique and highly reliable inflatable sealing arrangement and is the only moving part in the system which ensures the overall system's reliability and low maintenance operation.

Gerry McFadden, Southern Fleet Director, commented that "Southern Railway are very pleased with the centralised sand pumping stations that were installed at the Selhurst Traincare Depot, provided by Schenck Process, as they save time in the refilling of the sand boxes and increase the efficiency of our depot operation to carry out an important key process."



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