**ASK THE EXPERT:** SD Clip System

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**What is an SD Clip?**

The SD Clip – ‘SD’ stands for ‘Safe Driven’ – is a modern screwed fastening system produced by Pandrol Fastening Systems Product Line. Designed to be delivered pre-assembled on the sleeper or slab element, the SD Fastening System provides controlled clip guidance from the parked to the in-service position, eliminating the need for track workers to place their fingers in areas of potential safety risk. The SD System can also deliver high rates of installation with mechanical methods.

**How do SD Clips work?**

The SD Clip System is tensioned using a screw and insert system. This provides enough axial force to compress the clip and deliver the necessary clamping force to the rail foot.

**Where are SD Clips best used?**

SD Clips can be used across all sectors of the railway infrastructure, from heavy haul railways through to the light rail sector, and everything in between. With a family of SD Clips designed for specific market segments, each fastener type provides a different set of performance characteristics to meet the needs of a particular application (in combination with the other fastening assembly components). The SD Clip System can be retrofitted to existing SKL sleeper and slab profiles, making it the perfect upgrade product during a rail change, further extending the useful life of the sleeper or slab.

**The SD System is a screwed fastening solution. How is this different to the self-tensioning alternative?**

With self-tensioned fasteners, the clamping force holding the rail to the sleeper is generated by deflecting a spring clip through a given distance during the clip installation process – hence the term ‘self-tensioned’.

Screwed fastening systems generate this same force by deflecting the clip legs during the process of installing the screw anchor. As the screw is installed it compresses the clip legs, which are made from spring steel. In doing so, the clamping force required is generated.

**What’s next for the SD Fastening System?**

The SD System is currently being implemented across a range of applications to update tracks from ageing screwed systems that have been in use for many years. Its technical advantages over these generic screwed fastening systems include solving the ballast entrapment problem, fully automated installation and extraction, and being able to replace the clip without the need to remove the screw. This last point is particularly important, as detritus falling into the insert when the screw is removed causes sleeper life issues. As this does not happen when the SD Clip is replaced, it prolongs the working life of a concrete sleeper.

The SD System is also being used more widely for turnout applications, as it can directly retrofit the sleeper profiles of the generic fasteners already in use and in need of updating.

Future developments include a self-drive feature that will automatically move the clip to the driven position under the action of tightening the screw spike, and to the parked position while the screw spike is being de-tensioned. The whole process will be carried out safely using rechargeable battery-powered hand tools.



