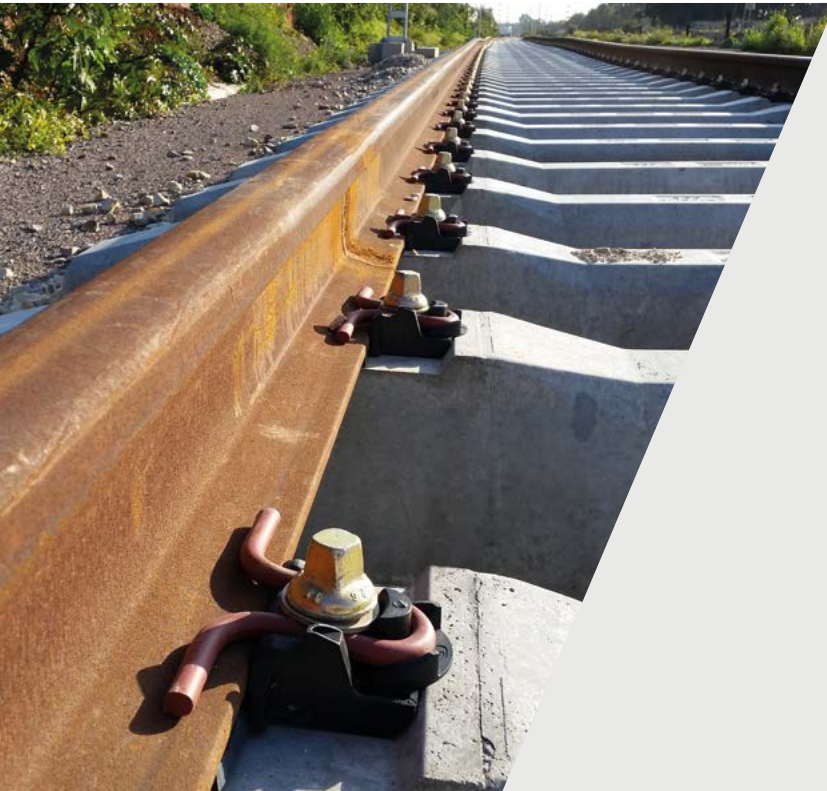


# SD

## Fastening systems

### Adding Value

A proven futureproofing fastening system that provides the ability to tune track performance quickly.



Pandrol's SD product family is a durable and reliable threaded fastening solution that is suitable for all applications. Designed to be delivered pre-assembled on the sleeper or slab element, SD can deliver higher rates of construction thanks to its efficient controlled clip guidance from parked to the in-service position.

SD stands for 'Safe Driven' and is characterized by a more compact and robust design with lower carbon footprint versus other threaded solutions. Its optimized geometry also enables automatic installation resulting improved efficiency and cost saving during installation and maintenance.

SD also offers various advantages over generic screwed systems, which include avoiding ballast entrapment in the fastenings and an improved sealing of the dowel to protect the sleeper.

## → TECHNICAL FEATURES

### Captive fastening

SD sleepers can be supplied to sites fully pre-assembled, with all components remaining captive during construction and maintenance activities.

### Switch-on/switch-off function

The SD clip can be moved quickly from the parked position (in which it is held securely without intruding into the rail seat) into the service position. The clip is simply pushed from one position to the other to either clamp or release the rail.

### Eco-design

Compared to other screwed solutions, the clip is relatively low weight. This reduces its environmental impact and logistics cost without compromising on performance.

### SKL conversion

SD products can be installed in an SKL-shaped rail seat, providing a simple retrofit upgrade.

### Increased robustness & Lifecycle

The clip has been modified to avoid frequencies where destructive amplitudes are generated, causing the clip to fail in fatigue. A significant increase in the natural frequency is key to increase the robustness of the tension clamp.

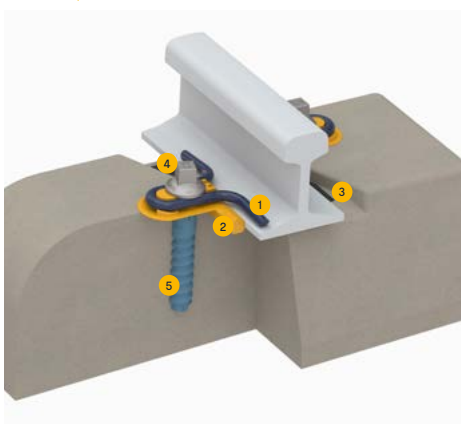
### Innovative geometry

Pandrol SD innovative geometry increase the contact area between clip and rail and solves ballast entrapment problem of SKL tension clamps.

## → ADVANTAGES

- The SD system's pre-assembled captive fastening units and simple switch-on/switch-off function enable very high rates of track construction and maintenance. This efficiency translates into huge savings in labour, as well as reduced distribution and handling costs throughout the system's lifecycle.
- The switch-on/switch-off technology and use of mechanised equipment reduces the risk of injuries to track workers during installation.
- The versatility of the SD design makes it suitable for most track infrastructure and enables it to meet a wide range of customer requirements for stiffness, adjustment, and rail clamping force. It can also be designed for use in small spaces such as turnouts, allowing customers to keep the same type of fastening throughout the track.
- The SD is an extremely environmentally-friendly fastening solution. reducing the CO<sub>2</sub> footprint, logistics costs and environmental impact.
- The SD system has been designed to avoid frequencies that cause fatigue and failure, resulting in a significant increase in the robustness of the tension clamp and a longer lifecycle.
- The innovative geometry of the SD fastening improves track stability, prevents dust and impurities entering the dowel, and solves the problem of ballast entrapment.
- The SD range has been adapted to fit into different types of sleepers normally equipped with other fastening systems as SKL, Nabla or J2, among others.

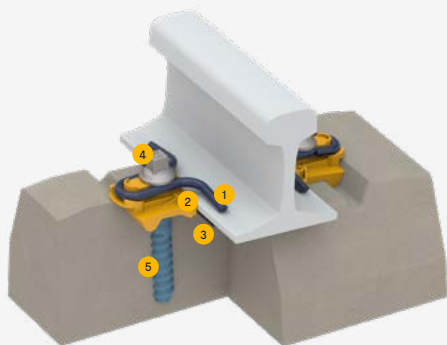
## → THE SD RANGE



### → **SD-E** LRT / METRO AND MAIN LINE

#### COMPONENTS

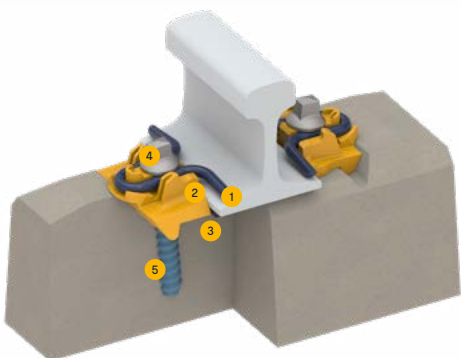
1. SD clip
2. Guide plate insulators
3. Rail pad
4. Anchor screw
5. Dowel



### → **SD-RE** LRT / METRO, MAIN LINE AND HIGH SPEED

#### COMPONENTS

1. SD clip
2. Guide plate insulators
3. Rail pad
4. Anchor screw
5. Dowel



### → **SD-HH** HEAVY HAUL

#### COMPONENTS

1. SD clip
2. Guide plate insulators
3. Rail pad
4. Anchor screw
5. Dowel

## → LEARN MORE



[www.pandrol.com](http://www.pandrol.com)