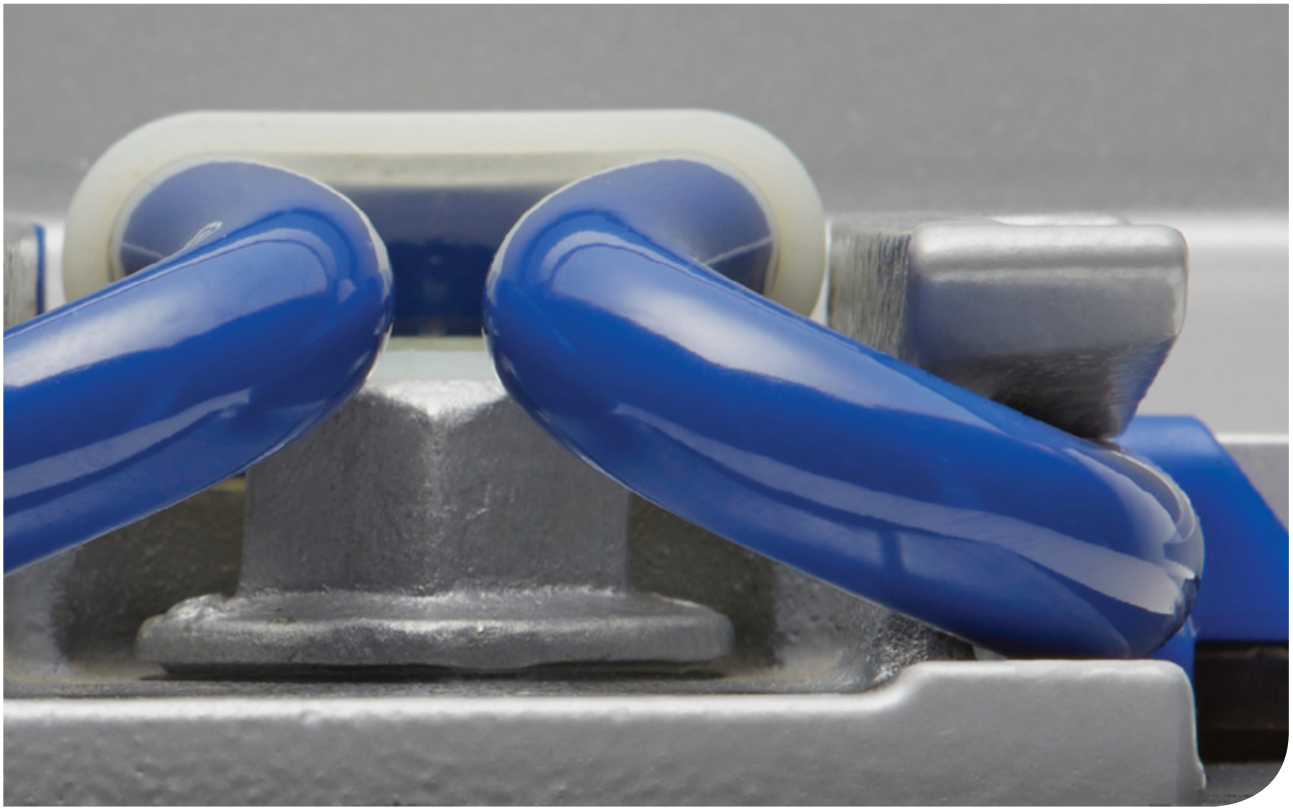
PANDROL

FASTCLIP FCA

PRODUCT INFORMATION



PANDROL
TRACK SYSTEMS

RAIL FASTENING SYSTEM:

FASTCLIP FCA

The PANDROL FASTCLIP FCA rail fastening system is designed for use on slab tracks where vertical adjustment is required.

Find more information about the FASTCLIP range at Pandrol.com

LEARN MORE >

FASTCLIP FCA is installed using top-down construction with embedded pre-cast concrete elements. Wet pour top-down construction is also possible using an alternate construction plate.

Components:

1. Clip and toe insulator:

- 1000 kgf nominal toe load
- Integral toe insulator reduces rail contact stresses and improves electrical resistance
- Rail-free, zero toe load option available

2. High-viscosity nylon side-post insulators

3. SGI cast iron shoulders

4. Rail pad

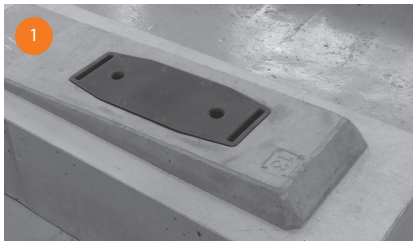
5. Anchor bolts and plastic inserts

6. Plastic construction plate

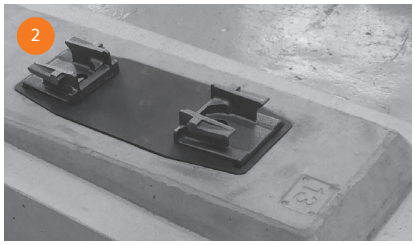
FASTCLIP FCA can be assembled at the sleeper factory and delivered to site captive (pre-assembled) on the pre-cast element.

PRE-ASSEMBLY PROCESS

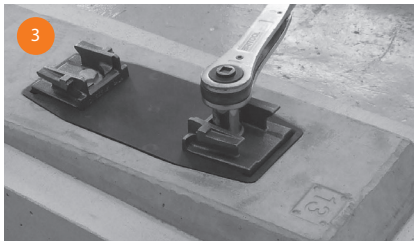
Installation in pre-cast elements (block, twin block or slab):



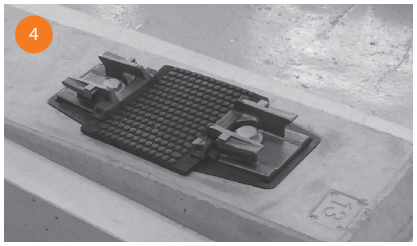
The plastic construction and anchor inserts are cast into the pre-cast element.



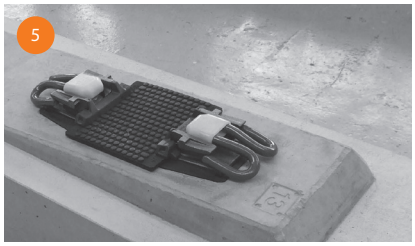
The cast shoulders are located on the plastic sub-plate.



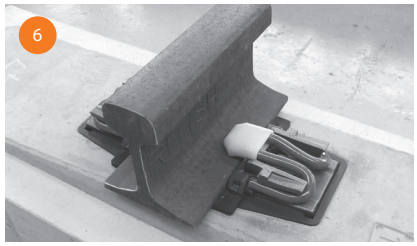
The anchor bolt is torqued to secure cast shoulders.



The rail pad and post insulators are installed in the rail seat.

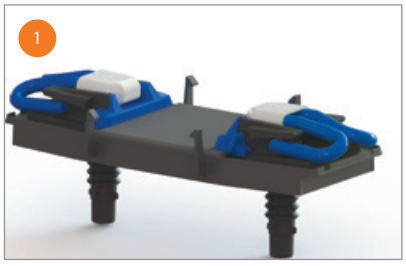


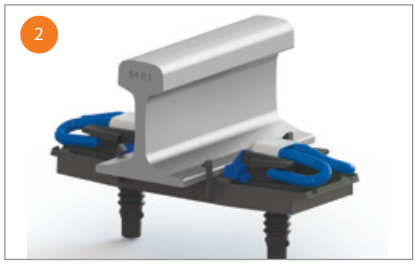
PANDROL FASTCLIP clips are installed into the parked position. Finished concrete elements are normally delivered to the construction site in this configuration.



Once the sleepers are placed and the rail has been threaded, clips are driven from the parked to the working position.

Installation by top-down wet pour method with alternate plastic construction plate:





1. The pre-assembled plastic construction plate is readied for attachment to the rail.
2. The assembly is attached to the rail, ready for concrete to be poured to the underside of the construction plate. Clips are in the parked position.

FEATURES OF ASSEMBLY

PANDROL FASTCLIP FCA is suitable for use with all forms of pre-cast elements, including block, twin block and slab. Pre-cast elements may be cast-in or resiliently mounted. Wet pour top-down construction is facilitated by alternate configurations that utilise a plastic construction plate.

HIGHLY EVOLVED

PANDROL FASTCLIP FCA is an adjustable evolution of the globally trusted PANDROL FASTCLIP system. Component materials are based on long established PANDROL specifications.

FULLY PRE-ASSEMBLED

The PANDROL FASTCLIP FCA system can be delivered to site fully pre-assembled and attached to pre-cast concrete elements. Low clamping force and rail-free variants are available to meet special track-structure interaction needs.

HIGHLY ADJUSTABLE

Lateral adjustment of +/- 5 mm per rail seat can be facilitated by custom side-post insulators. Vertical adjustment of +20 mm is facilitated by custom components and shims. For special applications, please consult PANDROL.

CUSTOM STIFFNESSES

Track stiffness is typically >40 kN, to fit CEN track categories B, C and D. Custom stiffnesses can be provided, within limits, through consultation with PANDROL.

TWICE THE RESISTANCE

FASTCLIP FCA provides two levels of electrical resistance.

- The rail is isolated from the shoulder by rail pad, side-post insulators and toe insulators.
- The shoulder is also insulated from the concrete by a conforming shim and plastic dowels.

HIGHLY VERSATILE

Custom FASTCLIP FCA products can be provided to meet special requirements. Please consult PANDROL for more information.

TECHNICAL SPECIFICATION

PANDROL

FASTCLIP FCA

- For use on non-ballasted tracks (slab tracks)
- Suitable for top-down and bottom up construction
- Optimised for use with pre-cast blocks, sleepers and slabs

Application data (Standard products – special variants may differ)				
Rail inclination	Provided in the concrete as required			
Typical applications	High speed, Metro, LRT, Mixed traffic			
Clip Type	PANDROL FASTCLIP FC1504			
EN 13481-5 Track Category	Cat A	Cat B	Cat C	Cat D
Maximum Axle Load*	130 kN	180 kN	260 kN	260 kN
Minimum Curve Radius*	40 m	80 m	150 m	400 m

* For special applications consult PANDROL.

Typical performance data* As identified by Track Category EN 13481-1		
	Value	**Test Method**
Assembly static stiffness	≈40 kN/mm minimum	EN 13146-9:2011
Assembly dynamic stiffness	≈60 kN/mm minimum	EN 13146-9:2011
Electrical Insulation	>10 kΩ	
Nominal toe load	1000 kgf	
Clamping force	>16 kN	EN 13146-7:2012
Creep resistance	>9 kN	EN 13146-1:2012
Lateral adjustment	+/- 5 mm	
Vertical adjustment	+ 20 mm	

* For Special applications consult PANDROL

COMPLIANCE WITH STANDARDS:

PANDROL FASTCLIP FCA has been tested against the requirements of EN 13481-5:2012 'Fastening systems for slab tracks.' The system will meet the requirements of the European High Speed TSI (Technical Standards for Interoperability).

NOTE:
PANDROL is a provider of innovative custom rail fastenings. Data in this document indicates typical performance. Actual performance is dependent on a range of external factors. Please contact us to discuss how PANDROL can tailor products to suit local operating conditions and specific requirements. Technical information in this document was correct at time of printing. Improvements may since have been introduced as a result of our continuous research and development programmes.

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