TECHNICAL SPECIFICATION

PANDROL

VIPA DFC

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

Application data (Standard products – special variants may differ)				
Rail Inclination	Provided in the concrete as required			
Typical Applications	LRT/Metro, general main line, high speed non ballasted tracks			
Clip Type	PANDROL FASTCLIP FC1501, 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					
	Cat A	**Cat B**	**Cat C/D**	**Test method**	**Remarks**
Assembly static stiffness	12.5-17.5 kN/mm	15-20 kN/mm	20-25 kN/mm	EN 13146-9:2011	Dependent upon pad selection
Assembly dynamic stiffness	17.5-22.5 kN/mm	20-25 kN/mm	25-30 kN/mm	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				

COMPLIANCE WITH STANDARDS:

PANDROL VIPA DFC has been tested against and meets the EN 13481-5:2012 'Fastening Systems for Slab Tracks' standards. It also meets European High Speed TSI (Technical Standards for Interoperability) requirements.

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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PANDROL TRACK SYSTEMS

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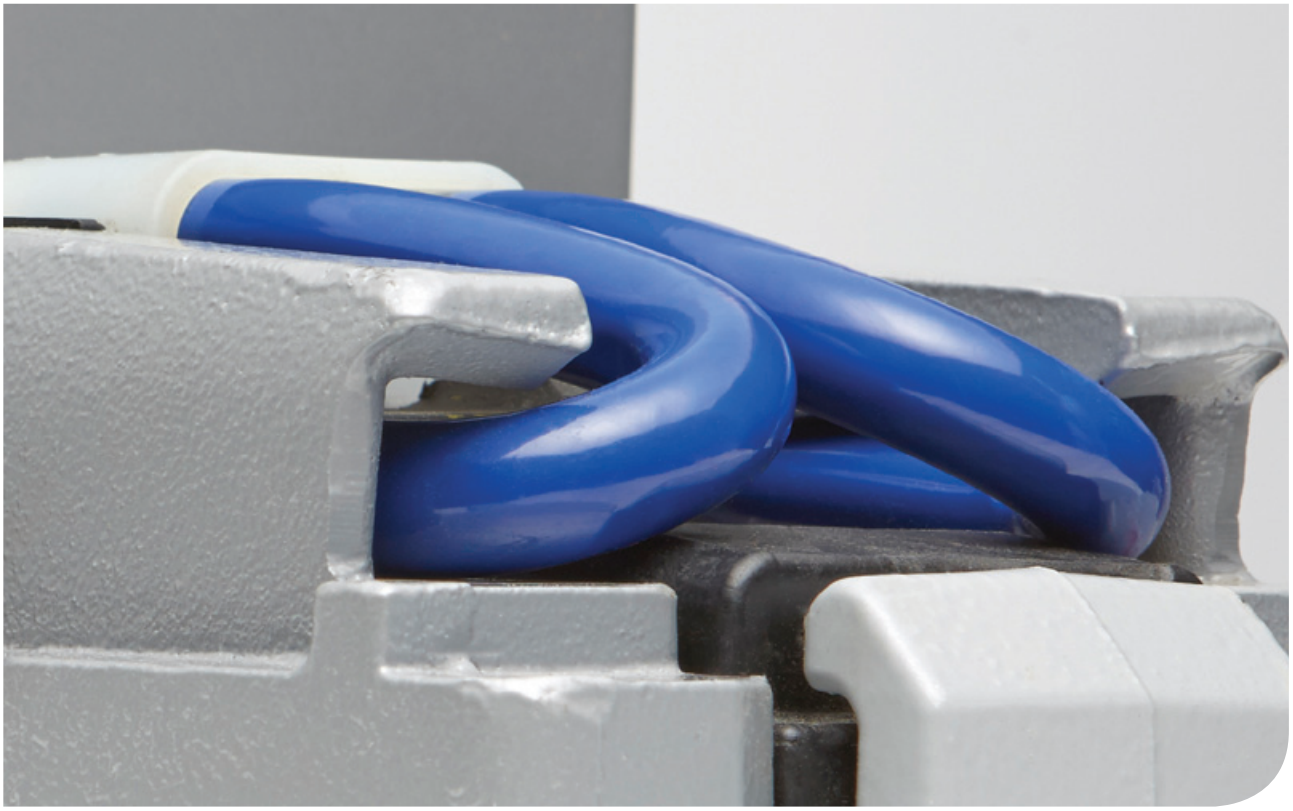
PANDROL

VIPA DFC

PRODUCT INFORMATION

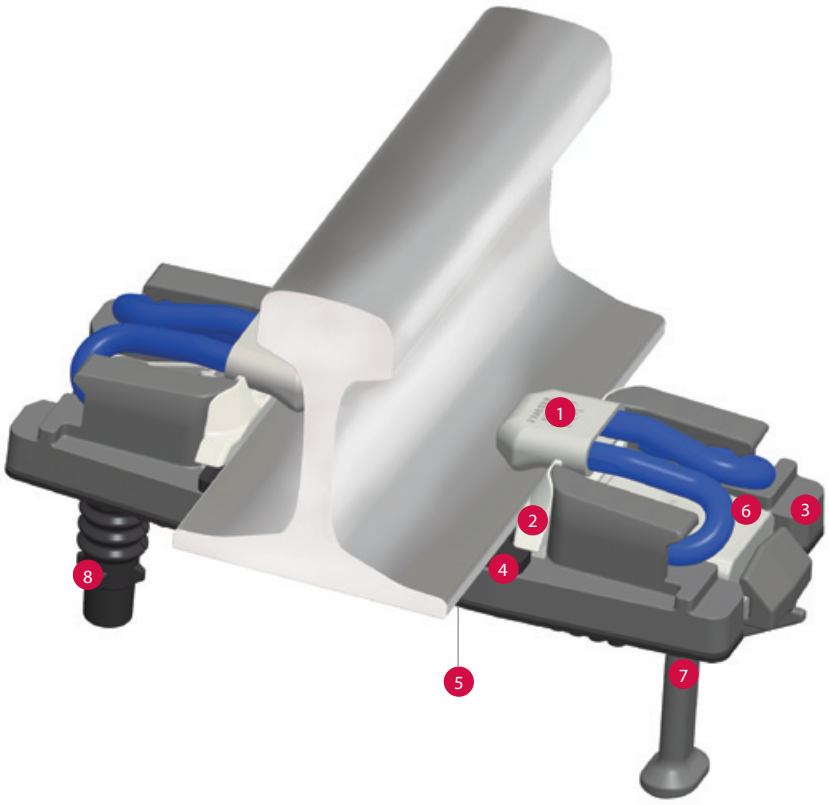


PANDROL
TRACK SYSTEMS

RAIL FASTENING SYSTEM:

VIPA DFC

The VIPA DFC rail fastening system is designed for use on non-ballasted slab tracks, where a typical vertical system stiffness of 20-25 kN/mm is required. Applications include LRT, metro, high speed and other slab track systems.



Integral PANDROL FASTCLIP fastenings allow for efficient stressing and rail maintenance, which are essential in building and operating non-ballasted systems.

Find more information about PANDROL VIPA DFC at Pandrol.com

LEARN MORE >

VIPA DFC is suitable for top-down construction with embedded pre-cast elements and installation on pre-cast slab systems.

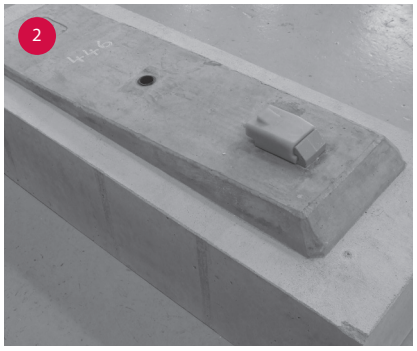
VIPA DFC products can be assembled at the sleeper factory and delivered to site captive on either the sleeper or block.

1. **Clip and toe insulator:**
   - 1000 kgf nominal toe load provides high deflection
   - Integral toe insulator reduces rail contact stresses and improves electrical resistance
   - Zero-toe load (rail-free) option available
   - High viscosity nylon side-post insulators
2. **Cast SGI baseplate**
4. **Rail pad**
5. **Baseplate pad**
6. **Field-side clamp**
7. **Cast-in SGI field side shoulder**
8. **Plastic dowel/bolted gauge side fixture**
9. **GS clamp (not shown)**

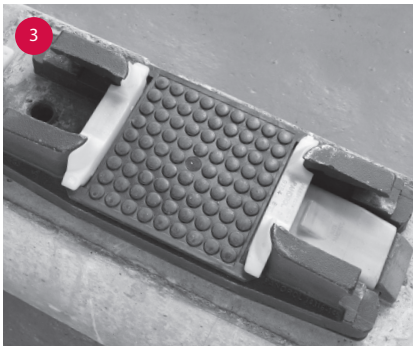
PRE-ASSEMBLY PROCESS

Installation into parked position

The sleeper is supplied with a cast-in SGI iron shoulder on the field side and a cast-in plastic insert on the gauge side of the rail seat.



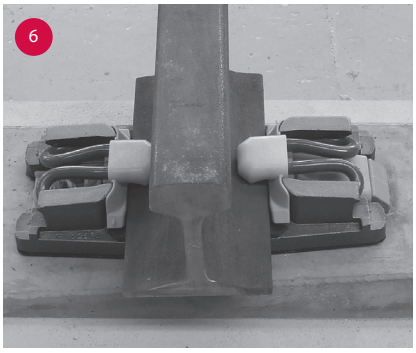
A field-side clamp is positioned on the field-side SGI shoulder.



The baseplate (with side-post insulators and baseplate pad already in position beneath it) is slid into engagement with the field-side clamp.

The gauge-side clamp is positioned and bolted down.

Pandrol Fastclip clips are installed into the parked position. Assembly are normally delivered to 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.

FEATURES OF ASSEMBLY

LATERAL LOAD TRANSFER

PANDROL VIPA DFC provides low track stiffness and high lateral loading resistance. This is made possible by a cast-in shoulder, which transfers lateral loads from the train through the baseplate and into the concrete. The energy transfer is similar to that of cast-in shoulders on concrete sleepers in conventional ballasted tracks.

MANY APPLICATIONS

The system features an adjustable indirect baseplate type that is ideal for installation on pre-cast blocks, sleepers and slabs. It can also be installed by wet-pour, top-down methods. Track and structure interaction is accommodated by low-toe load variants.

FULLY PRE-ASSEMBLED

PANDROL VIPA DFC baseplates can be delivered to track sites fully pre-assembled on the pre-cast sleeper, block or slab.

HIGHLY ADJUSTABLE

Lateral adjustment of +/-5 mm per rail seat is facilitated by exchanging the side-post insulators. Vertical adjustment of +20 mm, in 1 mm increments, is facilitated by exchanging the field-side clamp and shimming under the baseplate using simple flat shims.

Greater levels of vertical adjustment are also possible, depending on operating conditions.

LOW STATIC STIFFNESS

Resilient rail and baseplate pads enable VIPA DFC to meet demanding stiffness requirements. The system provides static stiffness as low as 12.5 kN/mm for LRT systems, 15-20 kN/mm for metro systems and 20-25 kN/mm for main line slab tracks (depending on materials used).