

PANDROL

# VIPA DFC

- Suitable for use on non-ballasted tracks (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 the requirements of EN 13481-5:2012 'Fastening systems for slab tracks' and will meet the requirements of the European High Speed TSI (Technical Standards for Interoperability).

**NOTE:**

PANDROL is an innovator and designer of bespoke rail fastenings. The data shown above is indicative of typical performance, but is naturally dependant on external factors. Should you have different requirements, please contact us to discuss tailoring products to suit local operating conditions. The technical information given in this brochure was correct at the time of printing, however the company undertakes a continuing programme of research and development and improvements may since have been introduced.

ISSUE 2 2014

**PANDROL TRACK SYSTEMS**

63 Station Road  
 Addlestone, Surrey  
 KT15 2AR  
 England

Telephone: **+44 (0)1932 834500**  
 e-Mail: **info@pandrol.com**  
 Website: **www.pandrol.com**



PANDROL

# VIPA DFC



PRODUCT INFORMATION



PANDROL PRESENTS:

# VIPA DFC

PANDROL VIPA DFC has been designed for use on slab tracks where a typical vertical system stiffness of 20-25 kN/mm is required for applications on LRT, Metro, high speed and other non-ballasted tracks.



The PANDROL FASTCLIP fastening allows for efficient stressing and rail maintenance, both of which are important when building and operating non-ballasted systems.

## VIPA DFC:

based on proven PANDROL FASTCLIP technology.

[LEARN MORE >](#)



For top down construction with embedded pre-cast elements. The system is also suitable for installation on pre-cast slab systems.

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

### 1. Clip and Toe Insulator:

- 1000 kgf nominal toe load, high deflection
- Integral toe insulator to reduce rail contact stresses and improve electrical resistance
- Zero toe load option (rail free) available

### 2. Side post insulators made from high viscosity nylon

### 3. 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



## PRE-ASSEMBLY PROCESS

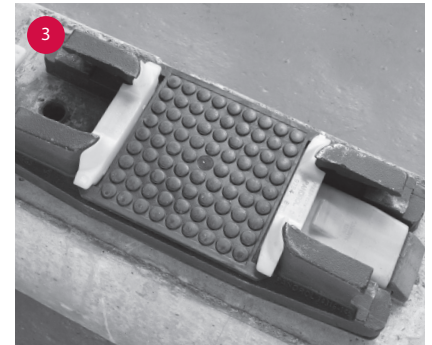
### Installation into parked position



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.



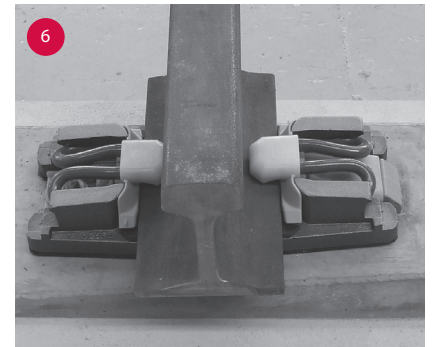
The baseplate (with sidepost insulators/rail pad and baseplate pad already in position underneath it) is then slid into engagement with the field side clamp.



The gauge side clamp is then positioned and bolted down.



Pandrol Fastclip Fastenings are installed into the parked position. The fastenings would normally be 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.

## FEATURES OF ASSEMBLY

### LATERAL LOADS

The compact PANDROL VIPA DFC is designed to provide low track stiffness with the capability to resist high lateral loading through a cast in shoulder feature which transfers the lateral loads from the train through the baseplate and into the concrete in the same way as cast in shoulders work on concrete sleepers in conventional ballasted tracks.

### APPLICATION

The system is an adjustable indirect baseplate type, ideally suited for installation on pre-cast blocks, sleepers or slabs, but can also be installed

by wet pour top down methods. Track / structure interaction can be accommodated by low toe load / rail free variants.

### FULLY PRE-ASSEMBLED

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

### ADJUSTABILITY

A lateral adjustment of +/- 5 mm per rail seat is possible by exchanging the side post insulators. Vertical adjustment of +20 mm in 1 mm increments is possible by exchanging the field side clamp, and

shimming under the baseplate, using simple flat shims. Higher levels of vertical adjustment may be possible depending on operating conditions.

### TRACK STIFFNESS

Typical PANDROL VIPA stiffness is provided through rail and baseplate resilient pads. Depending on the materials used static stiffness as low as 12.5 kN/mm can be achieved for LRT systems, 15-20 kN/mm for metro systems and 20-25 kN/mm for main line slab tracks.