**TECHNICAL SPECIFICATION**

PANDROL

FASTCLIP FCA

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

**Application data** *(Standard products - special variants may differ)*

**Rail inclination**
Provided in the concrete as required

**Typical applications**
High speed, Metro, LRT, Mixed passenger freight

**Clip Type**
PANDROL FASTCLIP FC1504

**EN 13481-5 Track Category**

<table>
<thead>
<tr>
<th>Category</th>
<th>Cat A</th>
<th>Cat B</th>
<th>Cat C</th>
<th>Cat D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Axle Load*</td>
<td>130 kN</td>
<td>180 kN</td>
<td>260 kN</td>
<td>260 kN</td>
</tr>
<tr>
<td>Minimum Curve Radius*</td>
<td>40 m</td>
<td>80 m</td>
<td>150 m</td>
<td>400 m</td>
</tr>
</tbody>
</table>

*For special applications consult PANDROL.

**Typical performance data** *(As identified by Track Category EN 13481-1)*

<table>
<thead>
<tr>
<th>Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly static stiffness</td>
<td>≈40 kN/mm minimum</td>
</tr>
<tr>
<td>Assembly dynamic stiffness</td>
<td>≈60 kN/mm minimum</td>
</tr>
<tr>
<td>Electrical Insulation</td>
<td>&gt; 10 kΩ</td>
</tr>
<tr>
<td>Nominal toe load</td>
<td>1000 kgf</td>
</tr>
<tr>
<td>Clamping force</td>
<td>&gt; 16 kN</td>
</tr>
<tr>
<td>Creep resistance</td>
<td>&gt; 9 kN</td>
</tr>
<tr>
<td>Lateral adjustment</td>
<td>+/- 5 mm</td>
</tr>
<tr>
<td>Vertical adjustment</td>
<td>+/- 20 mm</td>
</tr>
</tbody>
</table>

*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’, 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.

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**PANDROL**

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**PANDROL PRESENTS:**

**FASTCLIP FCA**

PANDROL FASTCLIP FCA has been designed for use on slab tracks where vertical adjustment is required.

For top down construction with embedded pre-cast concrete elements. The system can also be provided with an alternative construction plate to facilitate wet pour top-down construction.

**Components:**
1. Clip and Toe Insulator:
   - 1000 kgf nominal toe load
   - 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. SGI cast iron shoulders
4. Rail pad
5. Anchor bolts and plastic inserts
6. Plastic construction plate

**FEATURES OF ASSEMBLY**

The system is suitable for use with all forms of pre-cast elements (block, twin block or slab). These pre-cast elements may in turn be either cast-in or resiliently mounted. Alternative configurations with a plastic construction plate that allow for wet pour top-down construction are also possible.

**EXPERIENCE**
PANDROL FASTCLIP FCA is an adjustable version of the widely used PANDROL FASTCLIP system. All component materials are based on long established PANDROL specifications.

**FULLY PRE-ASSEMBLED**
The PANDROL FASTCLIP FCA system can be delivered to the track site fully pre-assembled/captive and attached to a pre-cast concrete element. Low clamping force and rail free variants are available to address track-structure interaction issues.

**ADJUSTABILITY**
Lateral adjustment of +/− 5 mm per rail seat is possible by exchanging side post insulators. Vertical adjustment of +20 mm is possible by component change and shims. For special applications please consult PANDROL.

**TRACK STIFFNESS**
Track stiffness typically >40 kN based on CEN track category B, C and D. Stiffness can be varied within limits through consultation with PANDROL.

**ELECTRICAL RESISTANCE**
The PANDROL FASTCLIP FCA has two levels of electrical resistance.
- The rail is isolated from the shoulder by rail pad, side post insulators and toe insulators.
- The shoulder is insulated from the concrete by a conforming shim and plastic dowels.

**VERSATILITY**
Bespoke designs can be provided to suit customer operating requirements.

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

1. The pre-assembled plastic construction plate ready for attaching to rail.
2. Assembly attached to the rail ready for concrete pour to underside of construction plate. Clips in the parked position.
3. Plastic sub-plate and anchor inserts cast into pre-cast element.
4. Cast shoulders locate on plastic sub-plate.
5. Anchor bolt torqued to secure cast shoulders.
6. Rail pad and post insulators installed in the rail seat.

**Installation by top down wet pour method with alternative plastic construction plate**

1. The pre-assembled plastic construction plate ready for attaching to rail.
2. Assembly attached to the rail ready for concrete pour to underside of construction plate. Clips in the parked position.

Visit Pandrol.com for more information about the FASTCLIP range.

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

**LEARN MORE**