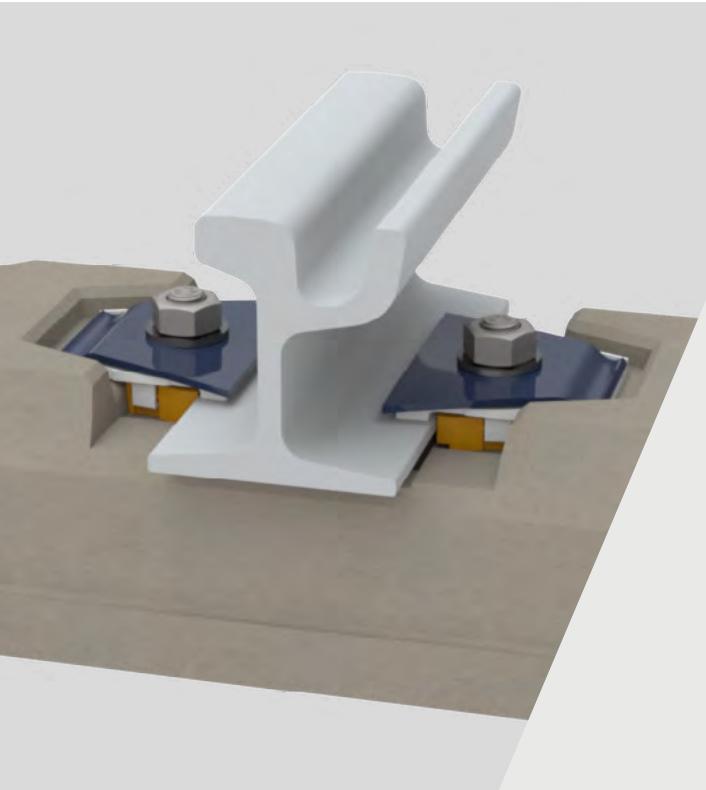


Nabla Evolution

Fastening Systems



Adding Value

Provides high performance on tight radius curves by maintaining the track gauge, significantly increasing the life of the assembly components.

Nabla Evolution is a direct rail fastening system that offers enhanced performance for tracks with tight radius curves. It has been proven in installations for several decades and is recognised for its simple installation and maintenance. By maintaining the track gauge, it significantly increases the life expectancy of assembly components.

Suitable for all track types, including heavy haul, Nabla Evolution offers improved electrical insulation and lateral force absorption. The unique use of glass-reinforced material in the lateral insulator also offers increased mechanical strength.

→ TECHNICAL FEATURES

High clamping force

An anchor screw is tightened to the contact, ensuring a consistent application of clamping force on the rail and a large range of torque. The high clamping force combined with the design of Nabla Evolution prevents rail roll.

Glass-reinforced material

The glass-reinforced material used in the lateral insulators creates a high level of mechanical strength and good lateral force absorption.

Optimised coach screw

The system's coach screw offers a large acceptable torque range of between 250 and 400 Nm, depending, for instance, on the anchorage design. Toe load is achieved automatically once the screw is tightened to contact.

Adjustable insulators

A good level of lateral adjustment is provided via the insulators to deal with track gauge and alignment. This allows fine gauge tuning by 1.25mm increment, ± 7.5 mm per rail seat.

Electrical insulation

Nabla Evolution provides electrical insulation of over 10 K Ohms (EN13146-5:2012).

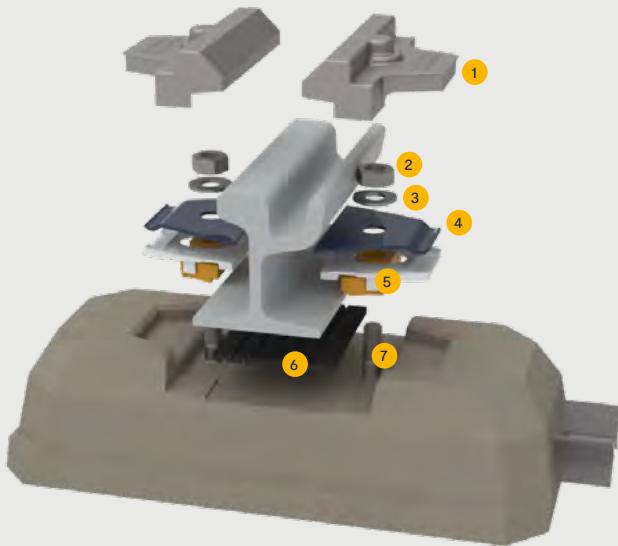
Options for rail pads

Nabla Evolution offers a large range of rail pads, from 35 MN/m for tramways, up to 400 MN/m and above for heavy haul applications and tight curves.

→ ADVANTAGES

- As a result of its deep post insulator, Nabla Evolution offers exceptional resistance to wear caused by lateral loads. This reduces track maintenance overheads.
- Nabla Evolution is simple to install, saving time and money.
- The use of glass-reinforced material results in a high level of mechanical strength and good lateral force absorption.
- Nabla Evolution offers higher electrical insulation than similar systems, making it an efficient, effective option.

- The system has been adapted for compatibility with all types of rail, including vignole, grooved, AREMA and industrial.
- The system offers a good level of lateral adjustment via the insulators, allowing fine gauge tuning and alignment. By maintaining the track gauge on tight radius curves, Nabla Evolution increases the life expectancy of assembly components.



→ COMPONENTS

1. Clip cover
2. Hexagonal nut
3. Flat washer
4. Nabla clip
5. Nabla Evolution insulator
6. Rail pad
7. Anchor-stud

→ SPECIFICATIONS

Assembly performance data

Recommended categories	A,B,C,D,E
Type of track	Slab / Ballasted
Rail inclination	1/40 or 1/20 or 0 (typical)
System type	Nabla
Static stiffness	On demand
Vertical adjustment	+ 5 mm
Gauge adjustment	± 10 mm
Electrical insulation	15 kΩ

Standard compliance

- EN 13481
- EN 13146

For any other configuration, please contact us.

→ LEARN MORE



www.pandrol.com