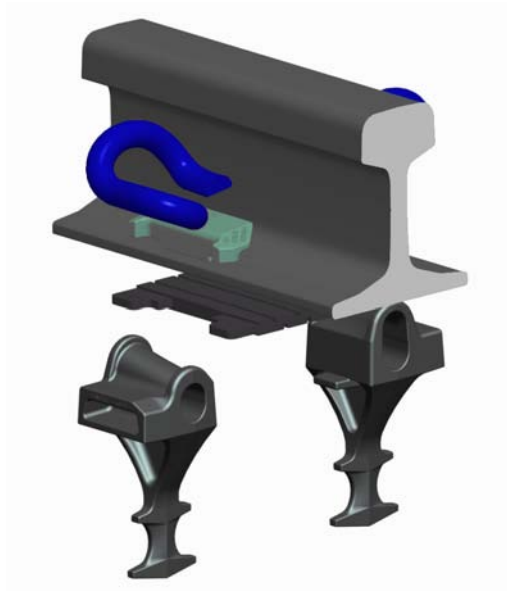
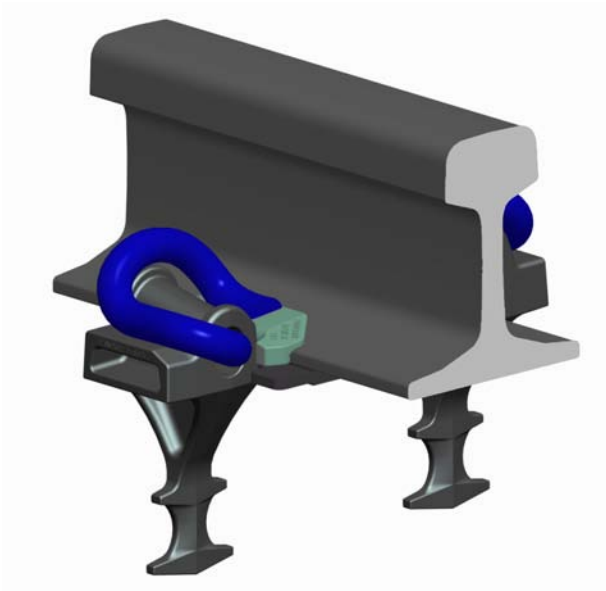


FOR BALLASTED TRACK PANDROL PRESENTS:

e-CLIP 1800/2000



INSTALLATIONS



FEATURES AND BENEFITS

Original design Pandrol e-Clip systems for virtually every possible known rail section, manufactured to one quality standard at one of Pandrol's global manufacturing facilities.

Original Pandrol e-Clips have been installed in more than 50 countries worldwide with hundreds of applications.

Pandrol is uniquely capable to support the whole fastening system, including special applications.

- **Safe, reliable system from the original design**
- **Threadless, self tensioning system for all market segments**
- **Most extensive range of designs for every type of application and environment**

TYPICAL PERFORMANCE RANGE

	e1800	e2000
Nominal Toe Load In clip driving fixture	900k gf	1250 kgf
Clamping Force EN 13146-7:2012	> 16 kN	> 18 kN
Creep Resistance EN 13146-1:2012	> 7 kN	> 9 kN
Electrical Resistance EN 13146-5:2012	> 5 kΩ	> 5 kΩ

SUITABLE FOR APPLICATION

- Concrete Sleeper
- Steel Sleeper Assemblies
- Timber sleepers (on Baseplates)
- Switches and Crossing
- Joint Bar Assemblies
- Rail Free (ZLR) / low toe load Assemblies

For special applications consult PANDROL

RECOMMENDATIONS FOR BALLASTED TRACK

E-CLIP 1800/2000		OPERATING CONDITIONS					GENERAL SUITABILITY				
CEN / CAT	Typical Operation	Typical Rad	Min Rad	Typical Axle	Max Axle	Max Speed	Rail Pad Resilience				
		(m)	(m)	(kn)	(kn)	(kph)	Very Stiff	Stiff	Med	Soft	Very Soft
A	Industrial / Light Urban / Tram	80	40	100	130	100	✓	✓	✓	✓	
B	Industrial / Light Urban / Metro	100	80	160	180	140	✓	✓	✓		
C	Main Line Operation	400	150	225	260	250	✓	✓	✓		
D	ML Large Curved (inc. High Speed)	800	400	180	260	250	✓	✓	✓	✓	
E	Passenger & Heavy Freight	150	150	300	350	200	✓	✓			
> E	Very Heavy Haul Freight	150	150	350	400	120	✓				

For guidance only. All applications differ. Please consult Pandrol for recommendations specific to your project.