

Rigid Catenary System

Electrification



Pandrol's Rigid Catenary System is an overhead conductor rail that offers an alternative to conventional catenary. More than 2,000km are installed in rail networks around the world, particularly in tunnels, with a specific retractable version for application in depots.

The Rigid Catenary System consists of an extruded aluminium profile clamping the contact wire. The profile is available in different lengths, which are connected electrically and mechanically with aluminium splices. It can be used to replace the contact wire with sustentation wire or the suspended bimetallic T-rail. Key benefits include operational safety, low maintenance costs and extended product life.

→ TECHNICAL FEATURES

Aluminium alloy profile

The Rigid Catenary System's aluminium alloy profile is manufactured by extrusion and heat treated. It is available in different lengths and two heights (80mm and 110mm).

Copper contact wire

The copper contact wire provides a large cross-section for the current, allowing operative OCS voltages from 750 to 25,000 V, without any feeding supply. The contact wire is inserted using a special tool (a 'contact wire trolley').

Joint plate

A self-centring aluminium joint plate is designed to deliver perfect alignment between the profiles.

PVC covers

These covers protect the aluminium profile from dust and humidity.

Suspension

The aluminium profile is suspended by insulated supports with hanger clamps. Earth and electrical connections are clamped directly onto the bar.

Gauge

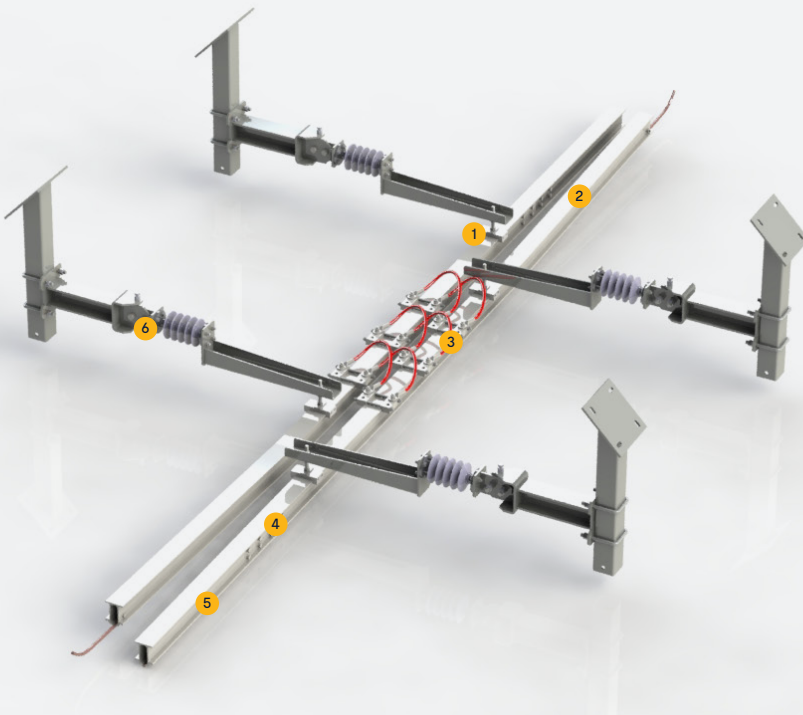
The gauge of the Rigid Catenary System is smaller than conventional catenary. As a result, it is adaptable to smaller tunnel sections.

Certification

The Rigid Catenary System is STI certified and meets European Standards (ENs).

→ ADVANTAGES /

- The Rigid Catenary System's small dimensions make it extremely adaptable for use on smaller tunnels' gauges and reducing construction costs.
- The copper equivalent section of approximately 1,415 mm² (without the contact wire) provides a large cross-section delivering increased current-carrying capability. It means that the distance between substations can be increased and less overheating of the system.
- The Rigid Catenary System involves at least ten times fewer components than conventional catenary. As a result, it is much quicker to install, easier to maintain and there is less stock management needed.
- There is no mechanical tension on the contact wire, increasing product life and saving money on replacement.
- The contact wire doesn't break off when it is completely worn, reducing interruptions to service and electrical risks.



→ COMPONENTS /

1. Fixed or sliding hanger clamp
2. Rigid catenary ramp
3. Power feed block
4. Splices assembly
5. PAC110 rigid catenary
6. Insulated swivelling bracket for DC catenaries

