

# Gautrain High Speed Railway

Lindapter Girder Clamps provided an adjustable solution for securing overhead line equipment and electrification catenary systems.



## Project Background

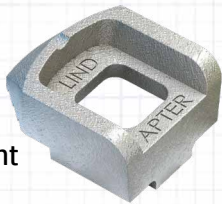
**Location:** Johannesburg to Pretoria, Gauteng, South Africa

**Product:** Type A Girder Clamps

**Market:** Overhead Line Equipment

**Client:** Gauteng Provincial Government

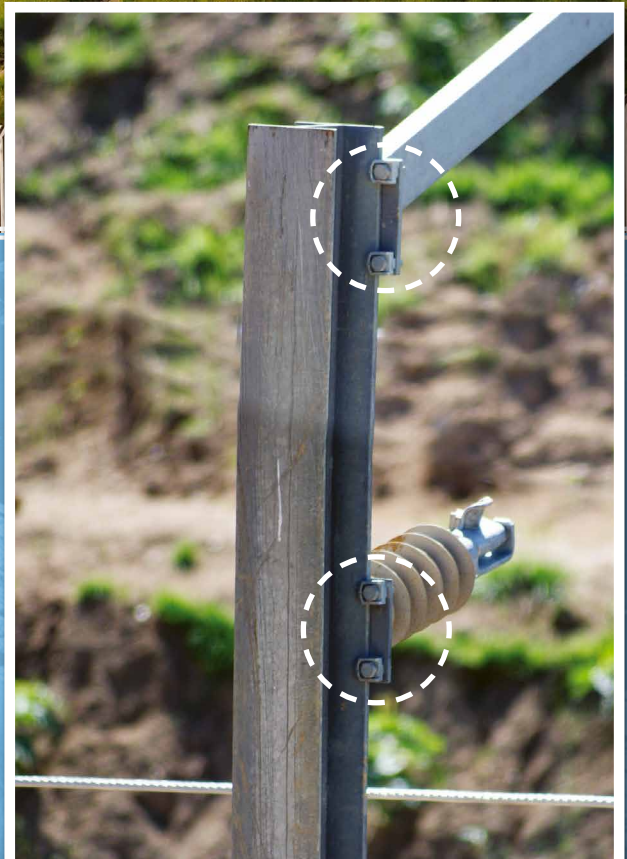
**Contractor:** Tractionel Enterprise



The Gautrain High Speed Rail project was the subject of extensive planning in the late 1990s to produce designs for a north-south and east-west rail route serving the Gauteng Province. Construction of the largest railway project in Africa at the time started in 2006 and was part of the government's plan to improve infrastructure and travel in time for the 2010 FIFA World Cup.

## Client Requirement

Railway electrification specialists Tractionel Enterprise won the contract to design, supply and install the overhead contact distribution system (OCDS) to 80 kilometres of track. The overhead design incorporated many different steel profiles, varying in both shape and thickness, to which overhead line equipment (OLE) and electrification catenary systems needed to be connected. The client wanted a connection solution that was easy to handle, interchangeable, fool proof, robust and cost effective.



Type A girder clamps secured cantilevered arms to steel columns & OLE insulators to I-Beam masts



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## Design Solution

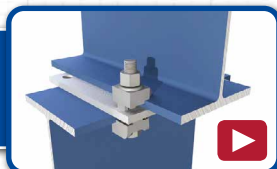
Lindapter were approached by the contractor to offer an alternative solution to the traditional method of using bolts, nuts and back straps. The Lindapter technical support team designed a series of simple connection details using Lindapter Type A Girder Clamps to secure cantilevered arms to the steel columns that ran the entire length of the track. The primary solution was a beam end plate to column design using Type A girder clamps in a four-bolt configuration. This provided the necessary strength to support the cantilevered arms over the track so that overhead line equipment and electrification catenary systems could be installed.



## Installation

Installation was quick and easy as each bolt was simply inserted into predrilled holes in the end plate of the cantilevered arms with the Type A on one end and nut on the other. The adjustability of the girder clamps allowed the contractor to align the cantilevered arms into the exact positions required. To complete the connection the recessed top of the clamp held the bolt captive while the nut was tightened with hand tools to the recommended tightening torque.

[Click here to watch the installation video >>>](#)



## Result

A total of 16,000 Type A girder clamps were used to provide a faster and simpler to install connection versus the traditional method of bolts, nuts and back straps. The lightweight clamps were easy to handle and were supplied with a hot dipped galvanised finish offering a cost effective, robust and low maintenance solution.

The railway opened in June 2010, in time for the 2010 FIFA World Cup, and runs for 80 kilometres across open routes, viaducts and tunnels linking Johannesburg to Pretoria.



**Lindapter supplied a cost-effective solution to each of the interfaces, off the shelf, supported by a very professional technical support team.**

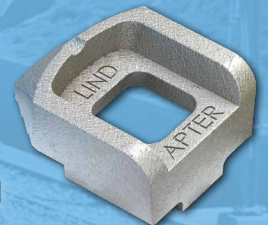
**The Gautrain design relies heavily upon the quality of the steel component interfaces to achieve the final system requirements – and this was achieved by utilising the ingenious Lindapter designs.**

*Allan Macpherson, Tractionel Enterprise*



## Benefits

- ✓ Fast cost-effective installation
- ✓ Only hand tools required
- ✓ No need for specialist labour
- ✓ Corrosion resistant hot dipped galvanised finish



[Click here for more details](#)