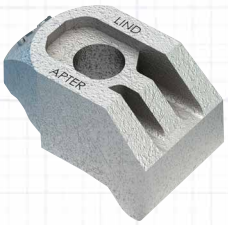
Clermont-Ferrand Tramway

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

Project Background



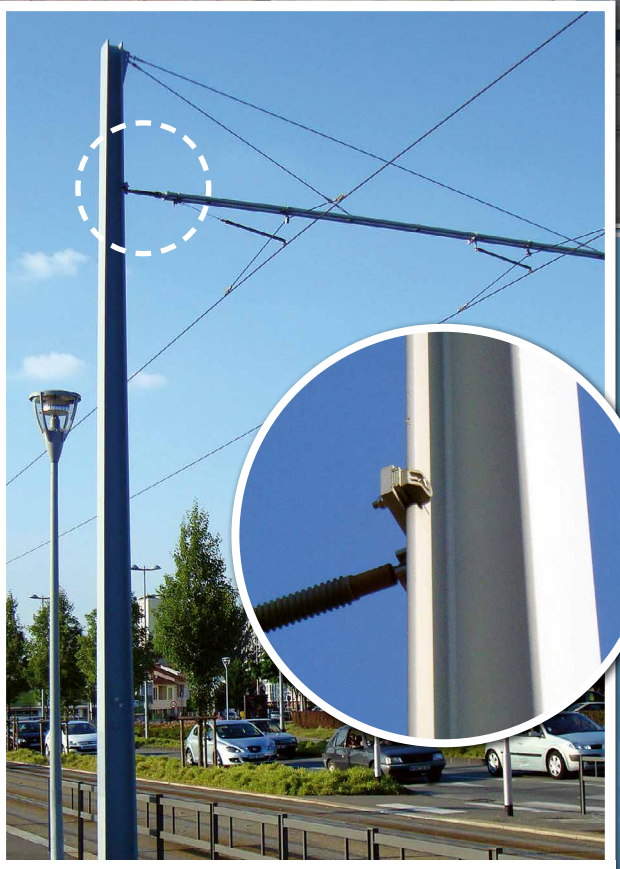
Location: Clermont-Ferrand, Auvergne-Rhône-Alpes, France
Product: Type AF Girder Clamps
Market: Overhead Line Equipment
Client: SMTC
Contractor: Engie Ineo SCLE Ferroviaire

The Clermont-Ferrand tramway is a transit system located in the city of Clermont-Ferrand which opened in 2006.

The tramway is guided by a single rail and powered by electricity from overhead catenary. The tramway comprises one tramline that serves 34 stations and runs on 15.7 kilometres of double track.

Client Requirement

Railway electrification specialists Ineo SCLE Ferroviaire (an entity of ENGIE Solutions) were contracted to overhaul the catenary system on the tramway. They needed a solution for connecting cantilevered support arms to the vertical steel masts that line the tramway route. The solution had to be easy to install which meant drilling should be avoided due to the onsite challenges, in particular working from height.



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Type AF girder clamps connect cantilevered support arms to steel masts

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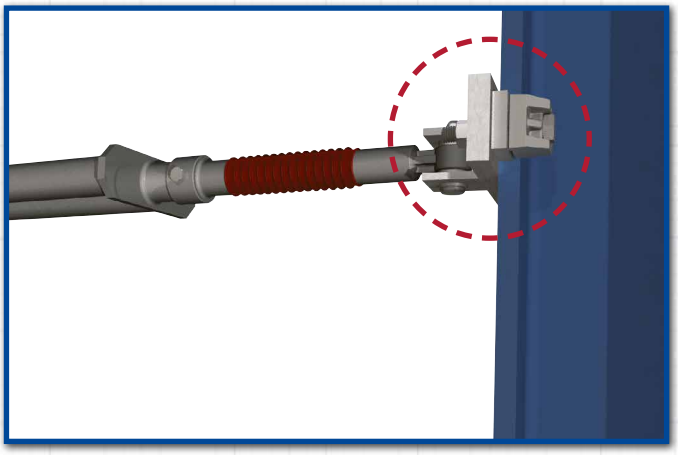
Design Solution

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 simple connection detail using Lindapter Type AF Girder Clamps to secure cantilevered support arms to the steel masts.

The solution was an end plate to column design using Type AF size M16 girder clamps and packing pieces in a two-bolt configuration. This provided the necessary slip and tensile resistance to support the cantilevered arms over the track.



Installation

Each connection point had a Type AF clamp, grade 8.8 bolt, packing piece, washer, nut and locking nut, all of which could be installed quickly and easily without drilling and using only hand tools. The clamps and bolts were inserted into predrilled holes in the end plate of the cantilevered support arms and a packing piece placed between the clamp and the end plate.

To complete the installation the recessed top of the clamp held the bolt captive while the washer and nuts were fitted and tightened to the recommended torque.

Click here to watch the installation video >>>

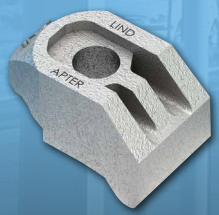
Result

Type AF girder clamps provided an easy to install solution versus the traditional method of bolts, nuts and back straps. There was no need for onsite drilling which made installation quicker and safer whilst working at height.

During installation, and before achieving full torque in the connection, the height of the cantilevered support arms could also be easily adjusted by sliding the girder clamp assembly up or down on the steel mast to ensure perfect positioning.

Key Benefits

- ✔ No drilling of the steel masts
- ✔ Quick and easy alignment of each connection
- ✔ High slip and tensile resistance
- ✔ Only hand tools required
- ✔ Safer installation



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