

# World's Largest Solar Carport

Lindapter Girder Clamps provided a solution for connecting roof supports to the carport steel columns.

## Project Background

**Location:** Biddinghuizen, Netherlands

**Market:** Renewable Energy

**Product:** Type AF Girder Clamp

**Quantity:** 2,500



MOJO has been the largest concert promoter in the Netherlands for over 50 years and is committed to creating sustainable events. Three years ago, MOJO began investigating the possibility of creating the world's largest solar carport on the Lowlands Festival 86 acre car park site. MOJO partnered with Solarfields NL and in November 2020 construction of the 90,000 solar panel carport began.

## Client Requirement

The carport structure was designed using IPE200 and IPE220 steel columns, pre-drilled in a fabrication shop and given a hot dip galvanized (HDG) coating for corrosion protection. Steel roof struts were designed to bolt to the main columns to provide the required support for the roof structure and solar panels. However, during construction there was a problem with the groundwork being slightly lower than planned. If the steel roof struts had been installed in the pre-drilled holes of the main columns, then the whole roof would have been 8" lower than required. Drilling new holes in the columns was not allowed as this would damage the integrity of the corrosion protection.



*The design incorporated a custom steel end plate*



*Lindapter high slip resistant Type AFs were specified*



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## Design Solution

Lindapter's technical support team worked with the client's structural engineer in order to design a suitable girder clamp connection.

The design incorporated a custom steel end plate for the struts which was adapted at the top to allow Lindapter Type AF high slip resistance girder clamps to connect the struts to the main columns at the correct height without damaging the corrosion protection.



## Installation

The contractor used 2,500 Type AF Girder Clamps with size ½" grade A325 bolts in a 2-bolt configuration installed through the upper holes in the end plate. The clamps were quick and easy to install using a calibrated torque wrench.

Standard bolts were then used to connect through the two lower holes in the end plate and through the existing two upper holes in the main columns.



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



## Result

The custom end plate and Type AF Girder Clamps provided a solution for positioning the struts at the correct height without the need for drilling in the field and without damaging the corrosion protection of the main columns.

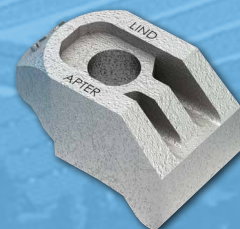
The high slip resistant clamps were also able to meet the load capacities imposed by the roof structure and had a HDG finish for a high degree of corrosion protection. The carport opened in August 2021 and produces around 35,000,000 kWh of electricity annually, enough to power around 10,000 households.



*The site generates 35 million kWh of electricity*

## Key Benefits

- ✓ No drilling in the field required
- ✓ High slip resistance capacities
- ✓ HDG finish for high corrosion protection



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