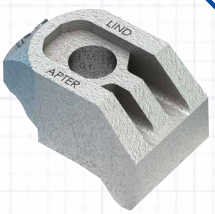
# Manufacturing Facility Roof Reinforcement

Lindapter Girder Clamps provided a solution for reinforcing the roof of a manufacturing facility prior to installing solar panels.

## Project Background

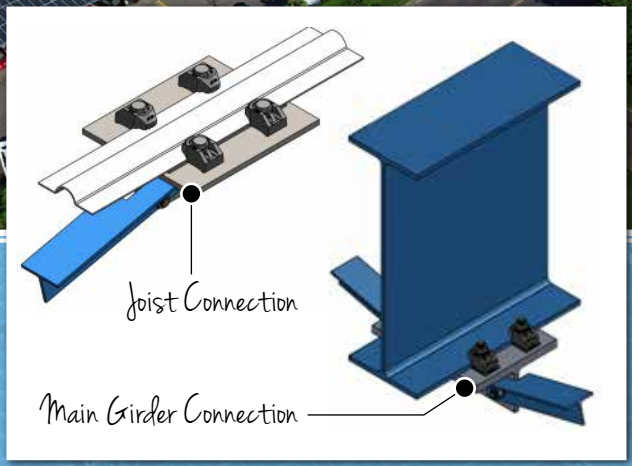



**Location:** Trenton, New Jersey, USA
**Product:** Type AF Girder Clamps
**Client:** Trane Inc.
**Installer:** GE Solar
**Specifier:** Greenman-Pedersen Inc.

Trane Inc. is a global manufacturer of heating, ventilation and air conditioning (HVAC) systems with 104 manufacturing locations in 28 countries. Their ambitious Global Climate Commitment includes a 35% reduction of greenhouse gas emissions from its operations. As part of this commitment Trane wanted to install a solar power system on the roof of its factory in Trenton.

## Client Requirement

The factory roof structure required reinforcing at load critical locations for support of the 5,500 photovoltaic panels. Welding or drilling offered challenges due to increased shut down time and potential contamination of the manufacturing floor. The structural engineer recommended Lindapter Girder Clamps as a time-saving, clean alternative.




Type AF Girder Clamps connect the bracing support

# Manufacturing Facility
# Roof Reinforcement

## Design Solution

Working with the Engineer of record Lindapter offered connections capable of tying the lower sections of the joists to the main girders via WT brace assemblies.

Brackets were secured using Lindapter high friction clamps to eliminate field welding and drilling.

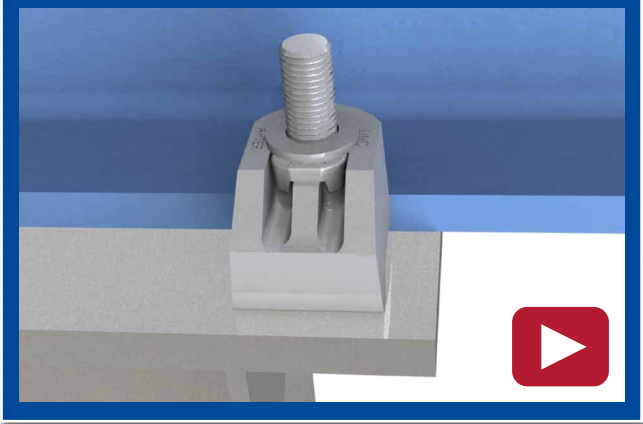
## Installation

Each bracing assembly was carefully lifted into position and then secured to the bottom flange of the existing steel joist using Type AF girder clamps.

The adjustability of the girder clamps allowed the contractor to slide and align the bracing assemblies into the exact positions required, before they were tightened with hand tools.

The new WT steel bracing sections were then connected to the bracing assembly and attached to the outer support beams.

Click to watch the **Type AF** installation video



## Result

Lindapter Type AFs provided an adjustable connection free of structural drilling and welding that reduced disruption, shutdown time for the factory and labour costs.

Reinforcing was accomplished without contaminating the manufacturing floor and the high capacities of the Type AF provided the necessary tensile, slip and combined loads. The installation went so well that the installing contractor, GE Solar, requested use of Lindapter on subsequent projects.

Independent technical accreditations such as the CE mark (ETA-13/0300), TÜV, Lloyd's Register and ICC-ES verify the load and slip capacities that led to successful reinforcement of the roof.

The factory now generates around 15% of its own power through the solar power system and over the next 20 years will save an estimated 35,600 metric tons of greenhouse gas emissions.

## Approvals

ESR-3976

## Key Benefits

- ✔ High slip resistance for tensile and frictional loads
- ✔ No drilling or welding required
- ✔ Adjustable onsite for easy installation

**Click here** for more details