

Santiago Bernabéu Stadium Renovation

Lindapter Girder Clamps provided a solution for connecting lighting equipment to the roof at one of the world's most iconic soccer stadiums.

Project Background

Location: Madrid, Spain
Product: Type AAF Girder Clamp
Contractor: Horta Coslada
Engineer: FHECOR
Quantity: 1,800



In 2019 Real Madrid Soccer Club unveiled plans for a \$537 million renovation project of its iconic Santiago Bernabéu Stadium. The huge renovation project would include increasing the capacity by 4,000 with an extra tier being added, increasing the height of the stadium by 32 feet, adding a retractable roof, major exterior developments and installation of a 360° video board and lighting that would encircle the entire roof area. The vision was to transform the Bernabéu into a modern, avant-garde stadium, with maximum comfort, safety and state-of-the-art technology.

Client Requirement

One of the distinctive features of the stadium was the new lighting that needed to be safely and securely attached to the roof. The design involved connecting the lighting to the steel columns of the original stadium structure via hollow structural sections (HSS). The contractor wanted to avoid welding or drilling in the field at height for many reasons including time, cost and safety therefore an alternative connection method was required. Lindapter's technical support team were approached by FHECOR, the consulting engineer for the project, and asked to submit a steel clamping design solution.



AAFs secured HSS framework and lighting equipment



The stadium staged matches throughout the renovation

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Design Solution

After receiving details of the existing structural columns, the HSS framework and lighting equipment, Lindapter's technical support team were able to propose a solution. This involved welding pre-drilled steel plates to the sides of the HSS framework in the fabrication shop and connecting these to the structural steel columns in the field with clamps. The connection design included Lindapter Type AAF adjustable high slip resistance girder clamps with 5/8" diameter, grade A490 bolts in a standard 4-bolt configuration.

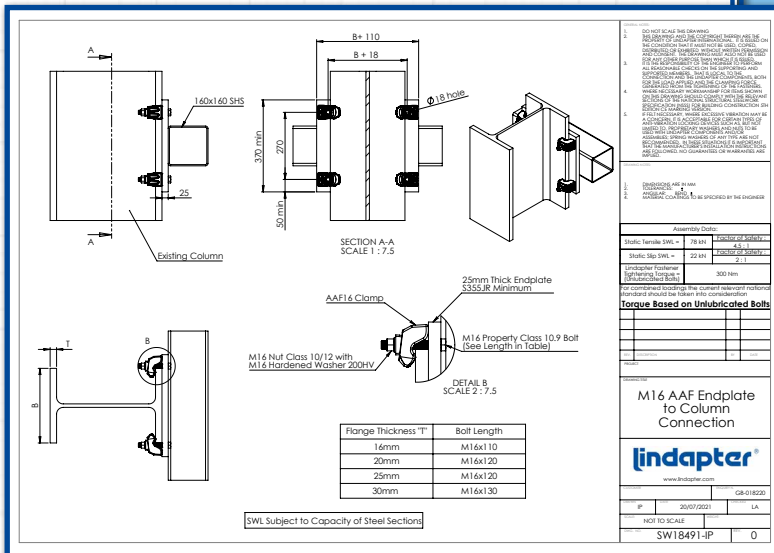
Installation

The contractor used 1,800 Type AAF Girder Clamps to connect the HSS framework and lighting equipment to the structural columns via the "end" plates. Installation was quick and easy as the connection assemblies could be positioned close to where they were needed before final adjustments were made and the clamps fully tightened using a calibrated torque wrench.

Result

Type AAF Girder Clamps provided an excellent solution that avoided the need for welding or drilling in the field. This offered many benefits to the contractor including a safer working environment, as no heavy tools or equipment were required, especially important as the installation was carried out at significant height. Other benefits were the time saved by clamping which resulted in lower labour costs.

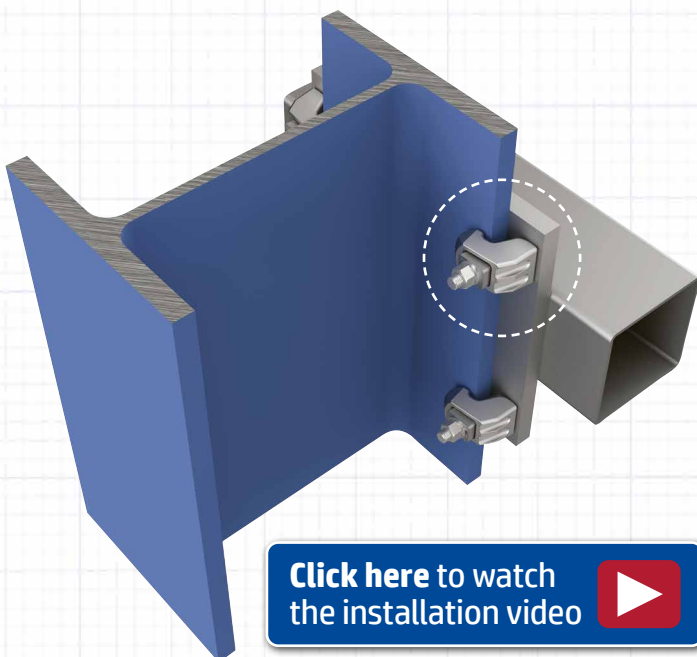
After more than three years of work the renovations are expected to be completed by the end of 2022 making the Santiago Bernabéu Stadium one of the best in the world.



Key Benefits

- ✓ No drilling or welding required in the field
- ✓ Safe installation at height
- ✓ Fast installation, saving on labor costs

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