

Bahrain Airport

Lindapter Hollo-Bolts provided a quick solution as part of the airport modernisation programme.

Project Background

Market: Airports

Product: Hollo-Bolt® by Lindapter®

Bahrain International Airport is undergoing a comprehensive modernisation programme which includes the construction of a new passenger terminal, along with the expansion and refurbishment of the existing terminal.



Client Requirement

Part of the development included the design and installation of an internal, one storey high spiral staircase. Engineers considered different options for connecting steel treads to a large hollow steel centre post.

The time required to weld all the treads was estimated at three days, however to meet a challenging construction timescale, a faster solution was needed to reduce installation time and provide the necessary structural strength.



Hollo-Bolts were inserted into pre-drilled holes

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Design Solution

The engineer decided to specify the Hollo-Bolt by Lindapter, an expansion bolt that requires access to only one side of a Structural Hollow Section (SHS), and offers a faster alternative to on-site welding.

The connection design incorporated four Hollo-Bolts per tread to achieve the required shear resistance and safe working load. Hollo-Bolt was also chosen due to its range of independent technical accreditations, which include the CE mark, TÜV and ICC-ES Seismic approvals.



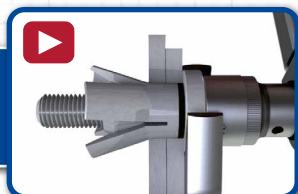
Installation

Holes in the structural centre post and end plates of each tread were pre-drilled off-site by the steelwork fabricator and then delivered to site. Hexagonal head, size M10 Hollo-Bolts with a zinc plated finish were used to connect through the end plates to the centre post. Installation was quick and easy as each bolt is simply inserted into the pre-drilled holes and tightened with a torque wrench to the recommended tightening torque to provide the necessary clamping force.

Result

Hollo-Bolts provided a drilling and weld free connection on-site that was quick and easy to install. Installation of the treads was completed in just 2 ½ hours rather than the estimated three days for welding. This allowed the contractor to stay on schedule and avoid any costly delays.

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



Installation was required from one side only

Key Benefits

- ✓ Fast, cost saving installation from one side
- ✓ Suitable for square, rectangular and circular hollow sections
- ✓ High resistance to shear and tension
- ✓ Unique high clamping force design
- ✓ CE Mark, TÜV and ICC-ES Seismic approvals

