

ITER Nuclear Fusion Megaproject

Lindapter Hollo-Bolts provided a solution for securing Hollow Structural Section beams and pipe supports.

Project Background

Location: Cadarache, France

Market: Nuclear

Product: Hollo-Bolt® by Lindapter®

Client: ITER Organization

Engineer: Exyte AG

ITER (International Thermonuclear Experimental Reactor) is the world's largest nuclear fusion experiment currently being built in France.

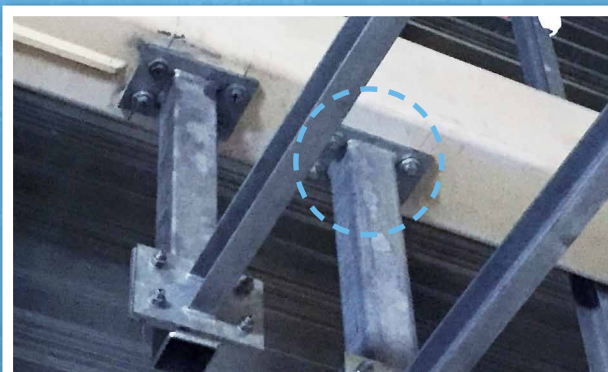
Thirty five nations are collaborating to build and operate the ITER Tokamak, the most complex machine ever designed, to prove that fusion is a viable source of large-scale, safe and environmentally friendly energy for the planet.

Client Requirement

During the construction of the facility engineers needed a safe and secure method of connecting Hollow Structural Section (HSS) beams and pipe supports that would carry pipe lines around the huge plant. Engineers were also required to design the facility to meet the International Atomic Energy Agency (IAEA) guidelines on Seismic Risks for Nuclear Power Plants.



Hollo-Bolts used to connect HSS beams



Hollo-Bolts used to connect pipe supports

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Design Solution

The engineer decided to specify Hollo-Bolt, the original expansion bolt for Structural Steel that requires access to only one side of the HSS. Hollo-Bolt was chosen as it offered significant benefits including, fast installation, high strength capacity, and a wide range of independent technical accreditations, which include the CE mark, TÜV and ICC-ES Seismic approvals.



Installation

The contractor used size $5/8$ " hexagonal head Hollo-Bolts with hot dipped galvanised finish to connect the HSS supporting beams to the structural steelwork already installed within the facility. Size $5/16$ " stainless steel Hollo-Bolts were then used to connect smaller pipe support brackets to the HSS.

Installation was quick and easy as each bolt was simply inserted into predrilled holes and tightened with a wrench to the recommended tightening torque.

Click here to watch the installation video



Result

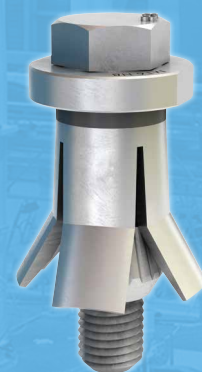
Hollo-Bolts provided a solution which avoided having to weld, or bolt through the body of the HSS. They also met the IAEA guidelines for nuclear power plant construction, as Hollo-Bolts carry full and independent ICC-ES approval for Seismic Design Categories A through F. Construction is expected to be completed in 2025 when commissioning of the reactor can commence, with full fusion experiments starting in 2035.



ITER nuclear facility under construction

Key Benefits

- ✓ ICC-ES Seismic Approval for SDC (A-F)
- ✓ Fast installation from one side only
- ✓ No specialist equipment required to install
- ✓ No hot work permits or area closures required
- ✓ High corrosion protection finishes



Click here for more details

