

## External Post Tensioning

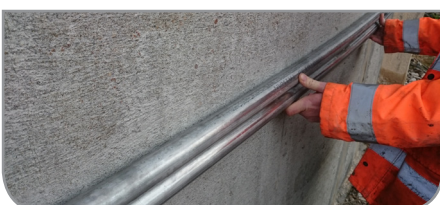
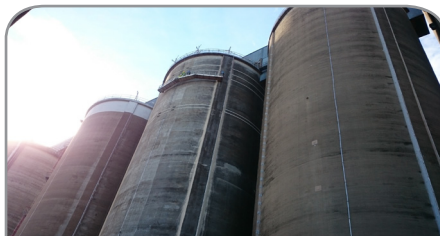
Wissington Sugar Factory Silo Repair, Norfolk

**Client**  
British Sugar

**Principal Contractor**  
Amey Inter Urban

**Works Commenced**  
July 2015

**Works Completed**  
November 2015



Wissington Sugar Factory in Norfolk is the largest sugar beet factory in the world. The factory's silo two was constructed in the 1970s and is 50 metres tall and around 20 metres in diameter.

A site inspection identified three separate locations where the concrete had spalled and the pre-stressing tendons had become exposed and corroded.

Freyssinet was commissioned to provide a post-tensioning design to substitute the tendon forces lost due to corrosion of existing tendons. The basis of Freyssinet's PT design was to provide the compressive force that is similar to the existing force in the tank wall around the affected area.

Freyssinet's design approach was to use external PT using the Freyssinet 1X15 system. The tendons were installed near to the existing corroded tendons, with the final positions of the new external tendons chosen to provide minimum increase in concrete residual stress. The Freyssinet 1X15 system is an unbonded PT that was installed into two semi circles to form a loop.

As part of the works, Freyssinet also carried out concrete and roof repairs and waterproofing. The project was completed on October 2015.

Freyssinet subsequently won the Phase 3 contract to install post-tensioning tendons and X anchors to silo 5 at the sugar factory. These works were completed in October 2016.