BEST PRACTICE INFORMATION

Sonic Logging Tubes in Pile Cages

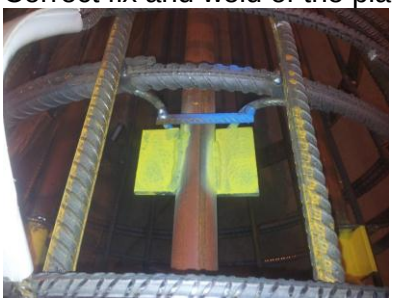
As part of the construction of the 1200 contiguous Pile wall for the Blomfield Box intensifies, integrity testing has to be carried out. Due to the piles being constructed under bentonite support fluid 'Sonic Logging' is the method of choice. The cages installed all contain at least three sonic logging tubes, but most of them have four tubes installed over the full pile length of 51m.

Each pile has four cage sections that have to be connected by couplers with the sonic tubes alongside. Sonic tubes are situated inside the cages and need to be connected prior to main bars and then the couplers can be lined up, tightened and torque up.

The tubes are guided in loops all along the cage whilst the sliding distance was limited using weld on T-Bars situated above the loop. However following a near miss in which a sonic logging tube fell through the cage into the pile bore an improved method of preventing falling tubes was needed, and although the exact cause was not established it is believed the most likely cause was weld failure of the T-bar

To mitigate the risk of future weld failures and uncontrolled sliding of sonic logging tubes into bores, T-bars have replaced by plates that are fully welded to the tubes. The benefits of this improved method are detailed below:

- The plates present a newly added element in construction of the cage
- Different Material is used which draws more attention to the detail
- Inspections are eased as the Plates are significantly bigger and have been painted yellow to make them easier to see.
- The plates have stronger welds.
- Correct fix and weld of the plate can easier be checked on site.



Plate

T-Bar