

## **Safety & Health Circular No. 19 / 2015**

### **Enhanced Safety Measures for Bored Piling Work**

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In a fatal accident happened on a non-Housing Authority (HA) site in December 2014, a team of workers were working on a pair of metal hinged covers at the platform of a Reverse Circulation Drilling (RCD) rig which was rested on a bored piling casing. The RCD rig together with the pile casing suddenly subsided and the hinged covers flung up. As a result, one of the workers was thrown and fell out of the platform to his death and the other three workers were injured. To prevent recurrence of similar accidents on HA sites, contractors are strongly advised to take the following enhanced safety measures when carrying out bored piling work:-

- (a) A competent person shall be appointed to conduct risk assessments.
- (b) A competent person/engineer shall be appointed to assess the stability of the plant, with regard to its weight and configuration, and the soil and weather conditions, etc. and ensure that the plant set-up is certified safe before it is used and/or allowing persons to enter and work on its platform.
- (c) Based on the results of the risk assessments, detailed safe working procedures and safety precautionary measures, which shall be in line with recognized safety standards and in conformity with the manufacturer's instructions, shall be formulated.
- (d) A robust mechanical integrity program shall be put in place to ensure the bored piling plant, equipment and all parts thereof are properly maintained.
- (e) The upper and lower clamps of the Casing Oscillator shall be pressurized and the power pack of the Casing Oscillator shall be connected to control panel prior to the addition of loading on the steel casing, when the toe of steel casing does not rest on firm in-situ soil and/or rock according to related site investigation report.

- (f) For long idling period of the Casing Oscillator, both the upper and lower clamps of the hydraulic cylinders shall be re-pressurized before resumption of work to ensure that the casing is firmly and properly clamped and held.
- (g) Both the upper and lower clamps of the Casing Oscillator shall be re-pressurized before the power pack is switched off.
- (h) A daily checklist together with “Pointing and Calling” system for the Casing Oscillator Operator shall be implemented.
- (i) In case the toe of steel casing does not rest on firm in-situ soil and/or rock during the reaming process according to related site investigation report, prior to the application of additional loading on the steel casing, four triangular wedges shall be welded onto the steel casing at a level right above the top of the upper clamps of the Casing Oscillator to prevent the casing from subsiding downwards.
- (j) All personnel including RCD operator working on the hinged covers at the RCD platform shall wear safety harnesses and properly attach them to independent lifelines suspended from the portal frame of the RCD. No one shall be allowed to stay on the RCD platform at the time of re-driving the temporary steel casing into ground by the Casing Oscillator after reaming.
- (k) Refresher courses and training to all operators and maintenance staff on safe method of operating, checking and maintenance of the Casing Oscillator shall be conducted.
- (l) Foldable and self closing metal gate/railing shall be installed at the access opening of each RCD platform as a barrier instead of metal chain to prevent fall of people from height.
- (m) An effective monitoring and control system shall be established and implemented to ensure that the above safety measures are strictly followed.

The content of this circular should not be regarded as exhaustive in respect of matters covered by relevant safety legislation. Contractors should formulate relevant safe working procedures and management systems according to the actual environment and operations on their own construction sites.