

Daily Maintenance of B-Type Blocks



BACKGROUND

There has recently been a near miss with two B-Type blocks falling 24 metres from the auger string.

This could have had very serious consequences had the banksman been stood in a different position at the time.

The augers on the CM120 had been exchanged approximately seven days prior to the incident from a 600 diameter to a 900 diameter. The blocks were checked and tightened during this procedure.

PRE INCIDENT ACTIVITIES

The piling rig had just completed its eighth pile of the day and was backing off the pile in preparation to set up on the next location.

During the setting up on the new location, two blocks in the auger connection fell to the ground.

INCIDENT DETAILS

The male and female B-Type coupling arrangement is designed to ensure the securing blocks carry all of the forces while drilling and extracting the auger during the pile construction. The securing bolts are employed to ensure the securing blocks are positioned correctly and seated on the male coupling. The investigation into the securing bolts failure and consequently the securing blocks coming out of their seating within the couplings, found that there was +20mm of thread still left protruding out of the male coupling.



This finding determines that the blocks were not tightly secured within their seating and the securing bolts in this case were loaded with the mentioned drilling forces. As the bolts are not intended to carry the high shear forces between the male and female coupling, they failed and the securing blocks fell out.

ACTIONS REQUIRED

Please communicate this alert to all staff within your teams who are at any foreseeable risk of materials or equipment falling onto them at work. A TBT briefing sheet is to be completed and sent back to Kerry Bates in the SHEQ Department.

A summary of the post incident actions and recommendations can be found below:

- The rig operator must ensure that the auger coupling's securing bolts have been tightened correctly on a daily basis.
- The bolts should be checked from ground level as the auger is drilled into to the ground.
- The rig operator must ensure the rig remains in the dead man position whilst the banksman is checking the bolts, to ensure there is no accidental movement of the rig.
- The securing bolts are to be torque tightened DRY to a value of 175 NM with a suitable socket and wrench. If the bolt is unable to be tightened fully, this could indicate that there is an issue with the securing bolts or the male coupling threads.
- The PL02 is in the process of being updated to encompass these daily checks into the guidance. In the interim, any issues with the blocks or bolts should be recorded on the PL02 and the usual fault reporting procedure followed.
- It's good practice for all personnel to remain a safe distance from the rig at all times.
- Any new banksman/apprentice should be mentored and shown the correct method of tightening the bolts and how to check for visual defects.
- Checks are also required to be carried out to pinned auger joints (12 T/m and 18 T/m auger strings) to ensure both pins are in place to prevent the connection from separating.
- The auger section must not be used unless all three securing blocks are correctly fitted and secured in place.