New Generation of Bauer Rotary Drilling Rigs

Given the continually increasing market requirements, BAUER Maschinen GmbH is best equipped for the future owing to the introduction of its two drilling rig lines ValueLine and PremiumLine in 2011. Despite their different purposes – the ValueLine is optimized for kelly drilling, whereas the PremiumLine comprises multifunctional drilling rigs for a large number of different applications in specialist foundation engineering – they have one important factor in common, says Manfred Schoepf, Head of Marketing of BAUER Maschinen GmbH: “Both our ValueLine as well as our PremiumLine rigs exhibit the highest Bauer quality standards. Our customers can be sure of this 100 percent. Four years after the reorganization, BAUER Maschinen GmbH is introducing a new generation of rotary drilling rigs of the ValueLine series: the medium-sized platform series, designed for bored piles with a diameter of up to 2.5 meters and a drilling depth of up to 70 meters. Through consistent focus on usefulness to the customers, functionality and profitability, it has been possible to come up with a new price-performance ratio for drilling rigs. The medium-sized platform series includes the BAUER BG 26 as the lowest-priced model, and – in the larger version – the BAUER BG 30. The new ValueLine rigs score with their latest technology.”

Thermal Integrity Profiling vs. Borehole Caliper Results

Non-destructive testing (NDT) of bored piles by Thermal Integrity Profiling (TIP) consists of measuring pile temperatures as its concrete cures, then analyzing them to identify anomalies and evaluate the position of the reinforcing cage. Measurements are often obtained by Thermal Wire cables (with thermal sensors at every 300 mm) attached along the cage. TIP results are frequently compared to Cross-Hole Sonic Logging (CSL), a traditional NDT method. CSL assesses concrete integrity using waves that travel between transmitter and receiver probes inserted in parallel tubes pre-installed in the piles. Unlike TIP, CSL cannot assess the position of the reinforcing cage.

Recently, Pile Dynamics, Inc. had the rare opportunity to compare TIP to borehole caliper results instead. Borehole calipers assess diameter and shape of a borehole prior to concrete placement. Six Thermal Wire cables were installed on a pile. Once temperatures were measured, TIP estimates of pile radius and caliper measurements just before concrete placement were plotted versus depth. Both plots display the same overall shape, increasing the confidence in TIP results. On the left graph, the colored plots coincide up to a depth of 13.7 meters, meaning the same temperature was recorded on all six measuring points at a given depth. Below 13.7 meters, some cables recorded warmer temperatures and others cooler ones. This is indicative of radial shifting of the reinforcing cage.