

# Quality check

Pile Dynamics (PDI) presents its new Shaft Quantitative Inspection Device (SQUID) for assessing the cleanliness and competency of drilled shaft and bored pile bottoms

**S**QUID is the latest addition to Pile Dynamics' line of quality-assurance and quality-control systems for the deep foundations industry.

The device provides measured load-penetration curves at the shaft bottom, and can offer construction professionals quick and reliable information about the cleanliness of the hole and the strength of the interface between a bearing layer and the base of a drilled shaft. It does not require testing personnel to work near the excavation. The quick and safe attachment to the end of the drill stem or kelly bar can be easily done by site personnel.



### ON SITE

When needed, a drill rig lowers the SQUID to the bottom of the drilled hole. Once encountering resistance, the contact plates remain on top of the debris layer, while the SQUID penetrometers move through this layer and then into the bearing material.

Load and penetration measurements can be displayed in real time with a wired connection from the SQUID to a wireless transmitter at the top of the hole. The signals of the three displacements and the three penetrometer cone pressures are digitally

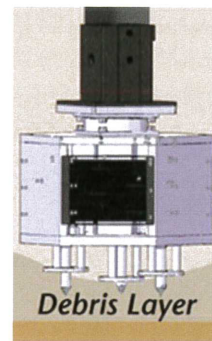
processed and wirelessly sent to the SQUID tablet. The wire can also be replaced with an on-board wireless transmitter that collects data from several tests at the shaft bottom, and transmits that data on return to the surface back to the SQUID tablet.

The inspector, engineer or contractor can then make an immediate decision as to the borehole acceptance, additional clean-out requirement or additional drilling. The decision-makers may be at a safe location onsite or connected via internet to the SQUID tablet in their office.

To determine debris thickness, the engineer defines a threshold force or tip resistance. The debris layer is defined when the measured load-penetration curves exceed the threshold force.

For shafts requiring end bearing, the measurements may also be used to confirm that cone tip resistance measurements on production shafts are similar to or exceed cone tip resistance measurements on shafts that are subjected to static or dynamic load testing. This verification, in conjunction with site soil exploration and observations during drilling, can provide designers with further confidence in their designs. ▼

*A drill rig lowers the SQUID to the bottom of the drilled hole*



*The SQUID penetrometers move through the debris layer into the bearing material*

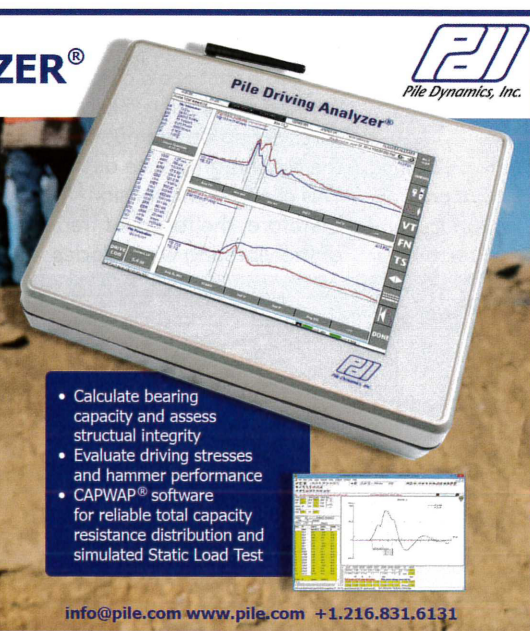


*The SQUID tablet*



## PILE DRIVING ANALYZER®

Pile Dynamics, Inc.



• Calculate bearing capacity and assess structural integrity

• Evaluate driving stresses and hammer performance

• CAPWAP® software for reliable total capacity resistance distribution and simulated Static Load Test

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