



Dynamic load testing of deep foundations via broadband: PDA model PAX

Engineers around the world have been using the Pile Driving Analyzer® (PDA) to verify the bearing capacity of deep foundations for more than 30 years. In spite of the verb “driving” in its well recognized name, the instrument is employed on load testing of cast in situ piles just as routinely as it is employed on the testing of driven piles. High strain dynamic tests, as tests performed with PDAs are commonly known, are carried out quickly and are non-destructive. Properly interpreted dynamic test results correlate very well with foundation capacities obtained from conventional static load tests.



Pile Dynamics, Inc. has announced the introduction of a new model of Pile Driving Analyzer- the PDA model PAX. The PAX crowns the succession of improvements that PDAs have experienced during their lifetime. It is sufficiently small to be portable, is battery operated, and, at only 5 kilos, surprisingly light. Its display doubles up as its control panel and keyboard, and has extremely high visibility in all lighting conditions.

Perhaps the most appealing feature of the new device is its remote data transmission capability. Pile Dynamics conceived the idea of collecting dynamic testing data on site and transmitting it to an office computer back in the 1990s, and patented the first remote data transmitting PDA in 2001. At the time transmission was accomplished via cell phone connection, with geographic and speed limitations. In spite of that, PDA users in Australia, United Kingdom, Sweden, Malaysia and other countries immediately embraced remote dynamic testing. These early adopters realized the advantages of having the option of remaining in the office, sending only the instrument to the job site, and using the PDA software (PDA-W) to monitor the load test in an office computer. They started to offer their clients tremendous scheduling flexibility and, no longer having to account for down time due to travel or weather delays, a more attractively priced service.

PDI has now taken remote dynamic testing to the next technological level by incorporating broad band internet technology on the PAX. When used in its “remote mode” the PAX offers a field crew a simple software interface and straightforward mode of operation. An office computer running PDA-W and receiving data gives the engineer the ability to perform comprehensive monitoring and analysis in real time.

For those that opt to be present during the execution of the load test, the PAX “local mode” performs as a full capability Pile Driving Analyzer coupled with a full capabilities personal computer. The PAX gives the field engineer access to all variables of interest in real time, and links directly to the latest version of the dynamic test data interpretation software CAPWAP.