



Using the PDA to Test Non-Driven Piles

The PILE DRIVING ANALYZER (PDA) system is the most widely employed system for Dynamic Load Testing in the world. It can assess the capacity of multiple drilled shafts, cast-in-place, continuous flight auger, helical, bored or driven piles in a single day. Micropiles may also be tested with the PDA. If you plan to use your PDA to test driven piles make sure to read about that application as well.

The PDA Model 8G is the culmination of a complete redesign effort that incorporates the latest technological innovations and truly embody Pile Dynamics's commitment to quality. The PDA-8G is as sophisticated in its looks as it is in the software that powers it. Thin, light and ergonomic, it features touchscreen gesture controls like swiping and pinch-to-zoom. The PDA-8Gs may have 4 or 8 universal channels of data acquisition, all capable of reading data from Smart Sensors, be it in traditional (cabled) or wireless mode. This allows for extreme testing flexibility and makes PDA testing of large drilled shafts more convenient than ever.

PDA tests, also known as, High Strain Dynamic Tests, require a drop weight (see examples) to impact the shaft, and that the top of the foundation be cushioned by a few thin plywood sheets when the drop weight hits the foundation. The PDA-8G takes data obtained by sensors (accelerometers and strain transducers) attached to the shaft and calculates foundation capacity, as well as multiple important quantities, by the Case Method and iCAP®.

With the PDA-8G, the engineer has the option of being in the field for the test or of using SiteLink® technology. SiteLink technology transmits PDA test data via Internet to an engineer located elsewhere who follows the test in real time. Test data displays and results are identical in both modes.

PDA-8G includes the PDA Software Suite, CAPWAP® and GRLWEAP. CAPWAP analysis of PDA data is essential for a Dynamic Load Test. It provides the soil resistance distribution along the foundation and simulates a static load test. Extensive correlations between CAPWAP simulated and actual static load tests have proven the reliability of this method of determining pile capacity.

The PDA-8G conforms to ASTM D4945 and many other codes and specifications. The PDA Software Suite, consisting of PDA-S with iCAP, PDILOT2 and PDI CURVES, outputs reports that satisfy ASTM 4945 requirements. An SPT Software add-on to the PDA-S enables the PDA-8G to determine the energy transferred to SPT rods (read about this application). PDA tests may meet the Axial Compressive Force Pulse (Rapid) Load Tests standard ASTM D7383 when a ram of sufficient mass is used.

Pile Dynamics recommends that all those who perform dynamic tests using the PDA take the Dynamic Measurement and Analysis Proficiency Test offered by PDI and PDCA. Read about the need for quality testing. The PDA-8G is patented under the Remote PILE DRIVING ANALYZER system US Patent No. US 6301551.