Pile Dynamics, Inc.

Quality Assurance for Deep Foundations

Driven Piles

Drilled Shafts / Bored Piles

ACIP / CFA / DD Piles

Micropiles

Helical Piles

www.pile.com

THE PDI STORY

In the mid-1960s, at what is now known as Case Western Reserve University (CWRU) in Cleveland, OH, Professor George G. Goble became the principal investigator of a research project to develop new technologies of pile testing. The Ohio Department of Transportation and Federal Highway Administration funded the initial study, entitled *Dynamic Studies on the Bearing Capacity of Piles*, which resulted in an electronic testing device displaying the bearing capacity of a pile based on fundamental stress wave theory. During that time, as a graduate student, Dr. Frank Rausche developed the Case Method and CAPWAP® analysis. A short time later Garland Likins, also a graduate student at CWRU, joined in both the software and hardware development efforts.

In 1972, the trio came together to form Pile Dynamics, Inc. (PDI), a firm dedicated to developing quality control instruments for the deep foundation industry, most notably, the Pile Driving Analyzer® (PDA).

PDI continues to innovate the deep foundations industry through the development of quality assurance/quality control testing equipment and technologies. Our technologies are used worldwide on various types of deep foundation structures, both on- and off-shore. We offer customized training in the use of our equipment, as well as certified continuing education through foundation testing workshops, seminars and webinars around the world.

Today, more than ever, PDI is committed to quality, research, innovation and superior customer care. Every PDI instrument includes technical support. Headquartered in Cleveland, Ohio, USA, PDI products excel in quality, reliability, accuracy and durability. Visit our extensive resource library at www.pile.com.

"We not only build pieces of equipment and perform testing, we are actually developers of the testing methods themselves."

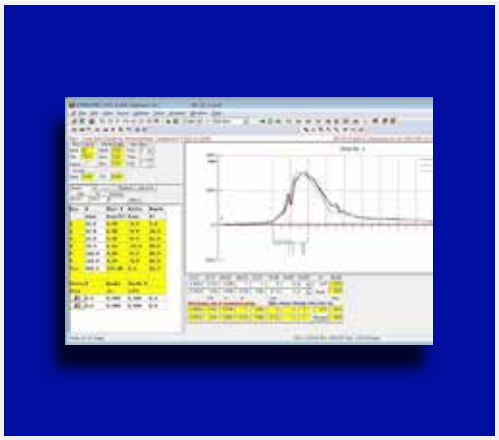
Frank Rausche, PhD, P.E., D.GE., Founder

Pile Types: Driven Piles | Drilled/Bored/Micropiles | ACIP/CFA/DD Piles | Helical Piles

Pile Driving Analyzer® (PDA-8G)

High strain dynamic load testing and pile driving monitoring system

- Performs dynamic load tests on most types of deep foundations
- Calculates bearing capacity and evaluates structural integrity
- Assesses driving stresses and hammer performance
- Available in cabled or wireless versions
- Complete with CAPWAP®, GRLWEAP, and iCAP® software, as well as PDIPLOT to summarize results



CAPWAP®

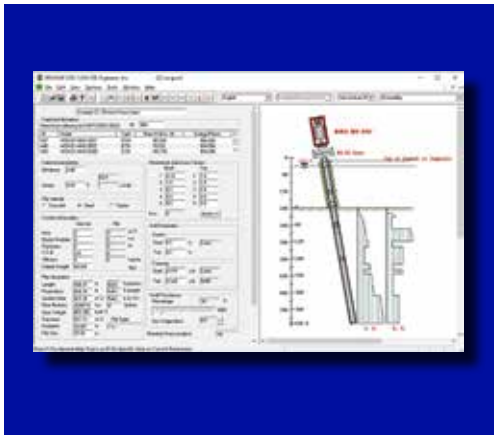
Signal matching software that uses force and velocity data measured by the PDA and PDA-DLT

- Estimates total bearing capacity as well as resistance distribution along the shaft and at the toe
- Simulates a static load test in compression and tension
- Predicts the load displacement behavior
- Determines stresses at each depth along the pile

Pile Dynamics Analyzer (PDA-DLT)

High strain dynamic load testing for drilled shafts and bored piles

- Specifically designed for drilled foundations, including drilled shafts, bored piles, ACIP and CFA piles
- Optimized for a small number of blows with variable hammer drop heights
- Top transducer method eliminates concrete build up or excavation, while improving accuracy and reducing labor costs
- Field to office data transmission available via SiteLink® Remote Testing



Wave Equation Analysis of Pile Driving (GRLWEAP)

Pile driving simulation software

- Simulates the pile response to pile driving equipment
- Calculates driving resistance, dynamic pile stresses and estimated capacity based on field-observed blow counts
- Helps select appropriate hammer and driving system with known piling, soil and capacity requirements
- Determines pile drivability and estimates total driving time
- Available in standard and offshore wave versions

Thermal Integrity Profiler (TIP)

Next generation quality assurance to assess cast-in-place concrete foundations

- Evaluates entire cross-section over full shaft length using heat generated by curing cement
- Evaluates concrete quality inside and outside of the reinforcing cage
- Reveals necking or inclusions, bulges, variations in concrete cover, shape of shaft and cage alignment
- Determines the as-built effective radius over the full shaft length
- Accelerates construction time

Static Load Tester (SLT)

Quick and accurate monitoring of force and displacement during a static load test

- Measures up to 16 channels per data acquisition box, with expansion DAB capability
- Significantly reduces field set up time (no field wiring required) with quick connections
- Includes Smart universal inputs from many types of sensors, vibrating wires, resistance strain gages, digital transducers and more
- Offers real-time graphic presentation of load, strain, displacement and pressure measurements

Shaft Quantitative Inspection Device (SQUID)

A new technology for quantitatively assessing cleanliness and competency of the bottom of drilled shafts or bored piles

- Measures the thickness of soft material or debris on top of the bearing strata, providing a force versus displacement output in numerical and graphical form
- An objective, quantitative assessment is reported through independent force vs. displacement measurements, digitally processed and sent wirelessly from the drilling location to the SQUID tablet
- Quickly and efficiently attaches to any drill stem or Kelly bar by site personnel

Shaft Area Profile Evaluator (SHAPE)

A cost effective quality assurance testing device providing a visual representation of foundation excavation prior to concrete pour in wet cost shafts

- Wireless acquisition calculations of shaft profile to determine shaft radius, volume and verticality
- 360 degree, 2D and 3D profile views
- Data acquisition at a rate of approximately one scan per second, with four or eight channels scanned simultaneously
- Quick connection to Kelly bar or can be used with a top mount winch system

Pile Integrity Tester (PIT)

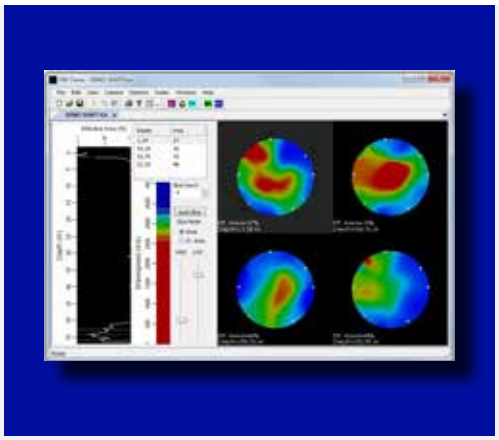
Low strain integrity testing by Pulse Echo or Transient Response methods

- Reveals potential shaft or pile defects such as major cracks, necking, soil inclusions or voids
- May determine unknown pile lengths
- Available in three versions: velocity only, force and velocity, or two velocity channels
- Complete with PIT-W Standard or optionally with PIT Professional reporting software

Cross-Hole Analyzer (CHAMP-Q)

Evaluation of concrete quality by the Crosshole Sonic Logging Method (CSL)

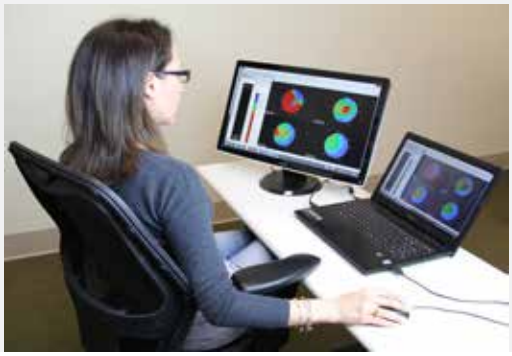
- Four channels (six profiles) can be pulled at once - saving time and money
- Color-coded CSL transceivers offer optimized speed of testing and data entry
- Performs real-time, onsite analysis as well as data transfer to a PC with CHA-W reporting software
- Offers PDI-TOMO 3-D tomographic software for superior results of questionable areas



PDI-TOMO

3D tomographic software for Crosshole Sonic Logging (CSL)

- Offers superior, intuitive visual identification of damaged or questionable areas via CSL data
- Generates efficient and easily comprehensive, quantitative engineering analysis
- Provides a valuable add-on service for the testing engineer



Pile Installation Recorder (PIR)

Automated monitoring equipment that assists in the installation of augered cast-in-place (ACIP) / continuous flight auger (CFA) and drilled displacement (DD) piles

- Records and displays accurately measured incremental group volume in real time, optionally with grout pressure or torque measurements and RPM
- Installation log results print immediately on a small field printer
- May be installed in any type of dedicated or general purpose rig equipment
- Can be used in low headroom applications

SPT Analyzer

Determines energy transferred by SPT Hammers using force and velocity measurements

- Measures the energy transferred into an instrumented SPT rod during a standard penetration test (SPT)
- Measures N Value to help improve reliability of soil strength estimates in geotechnical applications
- Employs smart sensor technology, allowing the sensor calibrations and rod cross-sestional area to be automatically read and recorded
- Multi-touch gesture and screen color scheme options for better data view

E-Saximeter

Hand held instrument registering relevant pile driving parameters, calculating diesel hammer stroke, or hammer blows per minute (BPM), for an accurate pile driving log

- Counts hammer blows and computes blows per minute for all hammer types
- Calculates stroke height for diesel hammers
- Provides a drive log of blow count as a function of depth
- Optional accessories allow for impact velocity measurements to compute kinetic energy and depth measurements

Thermal Evaluation of Mass Pours (TEMP-Q)

Measures temperature in various points of a mass pour as curing cement generates heat

- Thermal Wire® Cables tied to reinforcement provide digital readings up to 105 degrees Celcius
- Two-channel external data loggers read and store temperature measurements nd transfer data automically to the Cloud
- TEMP-Q sends email and texalerts when user-defined parameteres are exceeded
- Complies with ASTM C1074 for estimating concrete strength by the maturity method

Pile Dynamics, Inc. (PDI) manufactures industry standard, high quality Deep Foundation testing equipment. Since 1972, PDI has been the world leader in developing, manufacturing and supplying state-of-the-art QA/QC testing and monitoring products and software for the deep foundations industry.

Supplying QA/QC Testing Instrumentation Globally

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