



# Cross Hole Analyzer

## Cross Hole Analyzer (CHAMP-Q)

*Evaluation of concrete quality in deep foundations by the Crosshole Sonic Logging method (CSL).*

### Accurate. Reliable. Rugged.

The Cross Hole Analyzer determines the quality and consistency of the concrete of drilled shafts, slurry walls, bored piles, cast-in-situ piles and other types of concrete foundations. PDI's Cross-Hole Analyzer (CHAMP-Q) is ideal for testing up to six profiles in just one pull, saving time and money. CHAMP-Q has four color-coded cables for easy identification of each transceiver probe. The CHAMP-Q meets or exceeds the specifications of ASTM D6760 and several other crosshole sonic logging codes and standards.

### CHAMP-Q:

- Available in 2-channel and 4-channel units
- Allows for four probes (six profiles) to be pulled at once for ease and efficiency of data collection
- Assesses concrete quality and consistency of drilled shafts and other cast-in-place concrete structures
- Performs real-time analysis on site, as well as data transfer with CHA-W reporting software for additional analysis
- Meets or exceeds the specifications of ASTM D6760 and several other CSL standards
- Offers PDI-TOMO, 3-D tomographic software for superior tomographic results of questionable areas

### Test the entire shaft with CHAMP-Q:

Once a shaft is prepared with steel or PVC access tubes during construction, transceivers are lowered into the access tubes and a probe will transmit a high



frequency signal that travels through the concrete and is detected by the other probes, which are acting as receivers. This action is repeated with the other probes being automatically configured as transmitters, sequentially allowing up to six profiles to be scanned with a single pull. As these probes are raised and/or lowered along the length of the foundation, the CHAMP-Q displays and records the strength of the received signal, as well as the time from signal emission to signal arrival as a function of depth.

In CSL testing, scanning various tube combinations for the entire shaft allows evaluation of concrete quality and defect location along the length and by quadrant. With the CHAMP-Q, the user can pull four wires at once, each color coded for easy identification, and via a newly designed, space efficient tri-pod.

- Available in 2-channel and 4-channel units
- Four color-coded CSL transceivers offered in sturdy brass housing
- Enhanced 3D tomographic analysis with PDI-TOMO
- Optimized data entry for speed of testing and minimization of erroneous input

## The CHAMP-Q Main Unit is portable, light and rugged featuring:

- Fast and accurate field measurements
- Large sunlight readable color LCD and touch screen that is highly visible in all lighting conditions
- Optimized data entry for real time analysis on site (waterfall diagram)
- Replaceable battery
- USB ports for quick and easy data transfer

## CHAMP's CHA-W Data Processing Software provides powerful tools for data analysis such as:

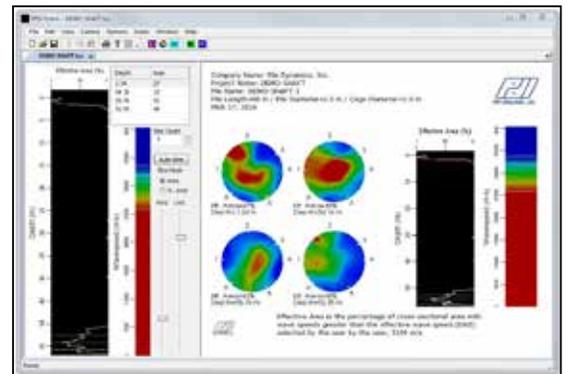
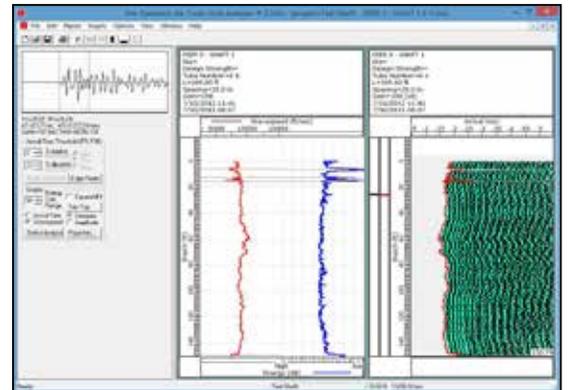
- Ability to simultaneously review six data profiles
- History mapping of already collected data
- First Arrival Time (FAT) detection
- Easy defect identification
- Two methods of signal strength evaluation (energy or amplitude)

## CHA-W reporting tools comprise of user customized graphs and tables:

- Sonic Map: Signal strength versus time and depth in traditional waterfall diagram
- First Arrival Time: Signal travel time from transmitter to receiver, versus depth
- Wave-speed Plot: Wave-speed (an indicator of concrete strength) versus depth
- Wave-speed Table: Wave-speeds, means and standard deviations
- Energy or Amplitude Plot: Signal strength versus depth
- Defect location graphically (horizontal red line) and in table format

## PDI-TOMO 3-D Tomographic Software:

- Seamless one-step operation from CHA-W export
- Significant reduction in analysis runtime, greatly improving productivity



**Pile Dynamics, Inc. (PDI)** is the world leader in developing, manufacturing and supplying state of the art QA/QC products and systems for the deep foundations industry. The company is headquartered in Cleveland, Ohio, USA, with offices and representatives worldwide. For additional information visit us at [www.pile.com](http://www.pile.com) or contact [info@pile.com](mailto:info@pile.com).