



Webinar on Quality Control of Drilled Shafts

Who should attend:

Geotechnical, structural and construction engineers; testers, researchers and contractors interested in learning more about high strain (PDA) testing of drilled shafts (a basic familiarity with PDA testing of driven piles is assumed) as an alternate to static load testing, quantitative inspection of shaft bottom cleanliness, as well as non-destructive evaluations of integrity using low strain dynamic foundation testing / pile integrity testing (PIT), cross hole sonic logging (CSL) and thermal integrity profiling (TIP) techniques.

Certificate of Participation

Each of the sessions of this program corresponds to 1.5 to 2 Professional Development Hours. A Certificate of Participation documenting the number of hours of instruction (PDH) will be provided to those that take a short quiz at the end of the webinar. Check with your engineering board of registration for their continuing education requirements.

When: Thursday, September 6, 2018

All sessions will begin at 9:00 am Eastern Time (New York Time) and typically last 1.5 hours. Sessions may last up to a maximum of 2 hours depending on the number of questions from participants. Questions from participants have to be submitted during the webinar in written form (use chat-box or email) and will either be discussed during the seminar or in personal communication depending on the general interest of the question.

You will have the opportunity to learn from Mr. Garland Likins without having to leave your desk.

Lecture: Garland Likins, P.E., is principal and past president of Pile Dynamics, Inc., providing quality assurance products for testing deep foundations. He is also a principal of GRL Engineers, Inc., providers of deep foundation testing services. In his over 40 years since participating in the original dynamic pile testing research at Case Western Reserve University, Garland has performed countless field tests and directed the development of a variety of field quality assurance testing products for various deep foundation types. He is active in ASCE, ASTM, ADSC, DFI, and PDCA, serves on several code committees, is an Associate Editor for both the ASCE Geotechnical Journal and the ASTM Geotechnical Journal, has authored more than 100 publications, and is a frequent lecturer.

High Strain (PDA) Learning Objectives:

At the conclusion of the webinar attendees will be able to:

- Understand the application of PDA to drilled shafts
- Understand the basic recommendations for the impact device
- Describe the preparation of the drilled shaft to allow the testing
- Understand the importance of concrete volume and soil profile information

PIT/CSL Learning Objectives:

At the conclusion of the webinar attendees will be able to:

- Compare and contrast each test method, based on advantages, best use and limitations
- Adequately prepare the foundation and select the equipment for integrity test by PIT or CSL
- Understand the necessary input on test equipment
- Analyze field data with the appropriate software for both PIT and CSL
- Interpret the severity of flaws and defects pinpointed by the tests



Pile Dynamics, Inc.

Quality Assurance for Deep Foundations

TIP Learning Objectives:

At the conclusion of the webinar attendees will be able to:

- Describe the basic principles of integrity evaluation using thermal measurements
- Understand how to collect data by both TIP methods
- Evaluate eccentricity of cage alignment in the shaft
- Evaluate the measurements for local defects (in cross section or concrete quality)
- Describe the conversion process of temperature to effective shaft radius
- Recommended the time window for testing after casting concrete
- Compare and contrast the advantages of thermal measurements, conventional Crosshole Sonic Logging (CSL) and Gamma-Gamma testing of drilled shafts

Program:

High Strain Testing of Drilled Shafts

- Basic requirements for high strain testing (ram weight, drop height and permanent set)
- Early applications and correlations
- Review of typical testing systems
- Data acquisition alternatives
- Recent examples
- Applications to micropiles and augercast piles

Shaft Bottom Evaluation

- Measure the thickness of the debris layer
- Evaluate strength of bearing layer with cone-like device

Pile Integrity Testing

- Basics of wave mechanics as it applies to integrity testing
- Preparing the top of the pile for the test
- Using the Profile program
- Testing in embedded structures

Cross Hole Sonic Logging

- Interpreting flaws and defects
- Editing incorrectly entered tube spacing and lengths
- Checking results of Tomography analyses against waterfall diagrams, and correctly using smooth, grid size and max wave speed
- Identifying debonding and knowing when flooding pile top can cure that problem
- Calibrating the encoder with full length scan of tube

Thermal Integrity Profiling

- Motivation for integrity testing
- Advantages and limitations of CSL, Gamma-Gamma and Thermal Profiling
- Principles of thermal measurements
- Interpretation of test data
- Test procedures
- Comparisons of Thermal and CSL/Gamma-Gamma results
- Examples / Case studies'



Registration

Please email this completed registration to Registration@pile.com

Webinar on Quality Control of Drilled Shafts

1 session of at least 1.5 hours duration each on September 6th, 2018 at 9:00 AM EST (New York Time)

One registration is necessary for each "site", which requires internet access of one computer plus a telephone connection. The registered site will be furnished with a user name and password plus conference call information. **Site fee includes an unlimited number of participants and four Certificates of Participation. Additional certificates are \$10 each.**

BILLING ADDRESS - (PLEASE PRINT or TYPE)

Organization: _____
Address: _____
City: _____ State/Province: _____
Postal Code: _____ Country: _____
Phone: _____ Fax: _____
Email: (who will be receiving webinar log in instructions) _____

SHIPPING ADDRESS (for certificate of participation) Check if same as Billing Address []

Organization: _____
Address: _____
City: _____ State/Province: _____
Postal Code: _____ Country: _____
Phone: _____ Fax: _____
Email: (who will be receiving webinar log in instructions) _____

Pre-Payment by credit card is required. Site Registration for one day Webinar Session: \$150.00

Number of Additional Certificates at \$10 Each _____ Total \$ _____ (4 certificates included in fee)

I am pre-paying by: [] VISA [] MasterCard [] American Express [] Discover

Credit Card No.: _____ Expiration date: _____

Card Billing address: _____

Verification code: _____ Signature: _____ Print Name: _____

Refund Policy: Cancellations are accepted only before the start of the first session of the Webinar; paid fee will be applied in full to a future Webinar.

Name of Participant(s), (Must be registered and complete quiz to receive Certificate of Participation).

- 1. _____ 3. _____
2. _____ 4. _____