



## **Webinar on Integrity Testing of Concrete Foundations by Low Strain Dynamic Testing, Cross Hole Sonic Logging and Basic Principles of Thermal Integrity Profiling**

### **Who should attend:**

Geotechnical, structural and construction engineers; testers, researchers and contractors interested in learning more about low strain dynamic foundation testing / pile integrity testing , or 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: December 3, 4 & 5, 2019**

All sessions will begin at 9:00 am Eastern Time (New York Eastern 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 Ryan Allin without having to leave your desk.**

**Ryan Allin, P.E.** is a senior engineer and partner in GRL Engineers and Pile Dynamics. He has a BS in Civil Engineering from Cleveland State University and has achieved Expert level on the PDCA/PDI Dynamic Measurement and Analysis Proficiency Test. After several years performing the entire range of services offered by GRL throughout the United States and in international offshore projects, Ryan is currently responsible for all GRL's educational programs for foundation testing professionals. In that capacity he has lectured on numerous seminars, webinars and workshops on foundation testing and has co-authored papers on the subject. Ryan is a member of the American Society of Civil Engineers and a registered professional engineer in Ohio, Pennsylvania, West Virginia, Delaware and Kentucky.

### **PIT/CSL Learning Objectives: (\$300 for both sessions)**

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 an integrity test by PIT and CSL
- Correctly enter 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

### **TIP Learning Objectives: (\$100 for TIP session)**

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

- Describe the basic principles of integrity evaluation using thermal measurements
- Collect data by various 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:**

**12/3-Pile Integrity Testing**

- Basics of wave mechanics as it applies to integrity testing
- Preparing the top of the pile for the test
- Selecting size of hammer to use, and whether to use instrumented or non-instrumented hammer
- Correct use of the hi-pass filter
- Using the Profile program
- Performing signal matching with PIT-S
- Performing Frequency Domain Analysis
- Identifying wave up and wave down using two velocity interpretation
- Testing in embedded structures

**12/4-Cross Hole Sonic Logging**

- Correctly using the CHA-W software
- 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

**12/5-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 Information:**

Cost: \$300 per connection for Integrity Testing of Concrete Foundations by Low Strain Dynamic Testing, Cross Hole Sonic Logging sessions.

Cost: \$100 per connection for Basic Principles of Thermal Integrity Profiling -payment by credit card is required.

To register, please email completed registration form (next page) to [Registration@pile.com](mailto:Registration@pile.com).



Webinar on Integrity Testing of Concrete Foundations by Low Strain Dynamic Testing, Cross Hole Sonic Logging and Basic Principles of Thermal Integrity Profiling

3 sessions of at least 1.5 hours duration each on December 3, 4 & 5, 2019 at 9:00 AM Eastern Time (New York Time)

Please email this Registration Form to Registration@pile.com before December 2

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: \_\_\_\_\_
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City: \_\_\_\_\_ State/Province: \_\_\_\_\_
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Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

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

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Pre-Payment by credit card is required.

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

- We are registering for
PIT and CSL Sessions on Dec 4 & 5.....\$300.00
TIP Session on Dec 6.....\$100.00
TOTAL .....\$ \_\_\_\_\_

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. \_\_\_\_\_ 4. \_\_\_\_\_
2. \_\_\_\_\_ 5. \_\_\_\_\_
3. \_\_\_\_\_ 6. \_\_\_\_\_