

# Physical Tester – Basics of Cement Testing Training

## 2-DAY PROGRAM FOR UP TO 10 PARTICIPANTS

This training program provides a classroom review and hands on demonstration of various procedures, test methods, and equipment required to be able to properly perform multiple tests on physical tester. Focus will be on methodology and understanding the results of each test.

**Cost** - This training program is offered for \$399 and includes Program binder for best practices and Study guide for Physical Tester.

**Who should attend:** Laboratory staff who tests cement and cementitious materials, including new laboratory staff members, QA/QC supervisors/managers, lab supervisors, project managers, or anyone interested in the basics of testing cementitious materials.

### Program Content:

#### Testing

Why do we test? What can we test? When do we test?  
How do we test?

#### Fundamentals of Cement Testing

Classroom and Laboratory hands-on training; Best practices and tips; How to interpret the results and identify common errors

#### Use, Maintenance, and Calibration of Equipment

How to properly use equipment; How to maintain and routinely calibrate equipment

#### ASTM Standards

These test methods will be included in the classroom and the hands-on training in the laboratory:

- ASTM C109 – Compressive Strength of Mortar
- ASTM C151 – Autoclave Expansion
- ASTM C187 – Normal Consistency of Cement
- ASTM C191 and ASTM C266 – Time of Set
- ASTM C185 – Air Content of Mortar
- ASTM C1437 – Flow Determination of Mortar
- ASTM C451 – False Set of Paste and ASTM C451 – Mortar
- ASTM C204 – Blaine Fineness
- ASTM C430 – Fineness by the 45-mm (#325) Sieve

*This is a training session ONLY and ACI certification is NOT part of this program.*

These additional standards and specifications will be discussed:

- ASTM C150 – Portland cement and
- ASTM C1157 – Hydraulic cement
- ASTM C305 – Mixing of pastes and mortars
- ASTM C778 – Standard sand and ASTM C219 – Terminology
- ASTM C490 – Length Comparator
- ASTM C511 – Temperature & Humidity
- ASTM C595 – Blended hydraulic cements
- ASTM C989 – Slag cement and ASTM C230 – Flow table
- ASTM C618 – Fly ash and natural pozzolans

#### Testing for Optional ASTM Requirements

*(Upon Request - Additional fees and time required)*

Sulfate resistance • False set • Drying shrinkage • Mortar expansion (ASR)

#### Other Cementitious Materials

Blended cement • Fly ash • Slag cement • Silica fume

#### Instructors:

**Michael Morrison**, Manager, Certification Program Development, has over 35 years of experience in the cement and concrete industry. He was supervisor of PCA/CTL Cement/Mortar laboratory for 10 years and has successfully trained nearly 200 cement testers over the last 25 years.

**Rusty Owings**, Resource Center Manager, has over 20 years of experience in the design and construction industry, including working for major cement manufacturer, a worldwide admixture manufacturer and a large regional Ready-Mix operation.

