

Physical Tester – Basics of Cement Testing

3- TO 4-DAY PROGRAM FOR UP TO 10 PARTICIPANTS

Procedures, Methods, Equipment, and Understanding Test Results

Program Content:

■ Sampling & Control Tests for Cement

Why do we test?
When do we test?
How do we test?

■ Fundamentals of Cement Testing

Classroom and hands-on training for standard paste and mortar tests
Tips not clearly addressed in test methods
Understanding test results

■ Use & Maintenance of Equipment

Expectations of cement & mortar lab staff
Calibration of equipment
Impact of poorly maintained equipment

■ ASTM Standards & Specifications

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

- *Compressive Strength of Mortar per ASTM C109*
- *Autoclave Expansion per ASTM C151*
- *Normal Consistency of Cement per ASTM C187*
- *Time of Set per ASTM C191 and ASTM C266*
- *Air Content of Mortar per ASTM C185*
- *Flow Determination of Mortar per ASTM C1437*
- *False Set of Paste C451 and Mortar C359*
- *Blaine Fineness per ASTM C204*
- *Fineness by the 45- μ m (#325) Sieve ASTM C430*

These specifications will be discussed:

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

■ Testing for Optional ASTM Requirements

Sulfate resistance
False set
Drying shrinkage
Mortar expansion (ASR)

■ Other Cementitious Materials

Blended cement
Fly ash
Slag cement
Silica fume

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.

Instructor:

Michael Morrison is Manager, Certification Program Development, for ACI. He has 35 years of experience in the cement and concrete industry, with 18 years of experience supervising or performing physical tests of cement and cementitious materials and has trained more than 150 physical testers.

Seminar handouts:

- Special Program Binder with notes and all required ASTM standards assembled by the instructor
- At the conclusion of the seminar, one copy of ACI's Cement Tester Training Video and one copy of PCA's Design and Control of Concrete Mixtures will be provided for the laboratory.

Membership:

Participation in this program includes a 1-year membership in ASTM Committee C01, Cement.

Optional:

A written and performance examination is available upon request.



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