



**CCRL**  
Cement and Concrete  
Reference Laboratory

[www.ccrl.us](http://www.ccrl.us)

Subject: Inspection of Materials Testing Laboratories

The Cement and Concrete Reference Laboratory (CCRL) is proud to announce the 36th Tour of its Laboratory Inspection Program. The CCRL Laboratory Inspection Program is an evaluation of construction materials testing laboratories based on ASTM test methods. The tour will encompass laboratories located in the United States, Canada, Guam, and Puerto Rico and will last for approximately two years. The following has been prepared to inform you about the inspection services of the CCRL. It contains a brief introduction to CCRL, an outline of the various inspection programs, and an invitation to continue or initiate participation in these programs.

#### Introduction

Established in 1929, the CCRL is a cooperative venture between the National Institute of Standards and Technology (formerly National Bureau of Standards) and ASTM International. Our primary function is to conduct inspections of laboratories which test hydraulic cements, concrete and concrete aggregates, slag cements, pozzolans, reinforcing steel, masonry mortar, brick or concrete masonry units. A charge for services rendered will be made in accordance with the enclosed fee schedule. A laboratory may participate if it performs some or all of the test methods in the scope of the inspection work being requested and is willing to pay the fee for the inspection. As in previous tours, the CCRL will visit all areas with laboratories requesting an inspection. However, some areas will be visited only once. To be certain of being inspected, please return a completed copy of the enclosed request form promptly.

#### Laboratory Inspection Program

The CCRL uses a "hands on" approach in the evaluation process which is unique to evaluators of these material types. Equipment is checked to specification requirements using measuring devices traceable to the National Institute of Standards and Technology. These measuring devices include load cells, balances, testing weights, thermometers, psychrometers, spherometers, rulers and micrometers among others. The procedures for each test method are demonstrated by the laboratory and any deviation from the method is noted. For specifics on each of the seven materials inspected by the CCRL see the Addendum which is attached to this letter.

#### Specifiers of the CCRL Laboratory Inspection Program

Laboratories may participate in the inspection program for one or more of the following reasons: (1) many organizations regard participation as an essential part of a quality assurance program for their laboratories; (2) accrediting organizations, such as the AASHTO Accreditation Program (AAP), use the inspection as their onsite assessment and may require the laboratory to participate when seeking accreditation; (3) contract specifiers require participation when selecting a laboratory. In the past these specifiers have included agencies of the federal government, state agencies, municipalities, architects, building code organizations, and builders.

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Sponsored by Committees C-1 and C-9 of ASTM International

Closing Comments

Inspection of laboratories is only one of the functions of the Cement and Concrete Reference Laboratory. Distribution of proficiency test samples is another. If you are not now participating in the CCRL Cement, Pozzolan, Masonry Mortar, Concrete Masonry Units, Reinforcing Bar or Concrete Proficiency Sample Programs, you are invited to use these supplements to the inspection program. Fee information and details of the Proficiency Sample Programs are available upon request.

Please reply regardless of your decision to participate or not in our inspection programs. This would allow us to keep our mailing list current with regard to future announcements of CCRL activities.

Your interest in our programs is greatly appreciated.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Steve Lenker", written in a cursive style.

Steven E. Lenker, P.E.  
Director, Construction Materials Reference Laboratories  
Cement and Concrete Reference Laboratory  
Materials and Construction Research Division  
Building and Fire Research Laboratory

Enclosures

### Hydraulic Cement Inspection Program

The cement inspection program is comprised of a review of most of the physical tests enumerated in ASTM Standard Specifications C91 and C150 along with related standards. The equipment from the following standards is reviewed: C109, C115, C151, C183, C185, C187, C191, C204, C230, C266, C305, C430, C451, C490, C511, C778, C1005, C1437, C1506 and E11. In addition the procedures from the test methods in the group listed above are demonstrated by laboratory personnel. ASTM Standard C1222, Standard Practice for Evaluation of Laboratories Testing Hydraulic Cement, has been developed for quality system purposes for cement testing laboratories. This standard is the basis for our quality system review as part of the cement inspection. A quality system, in general, includes the records and written procedures pertaining to personnel, equipment, and facilities. In this inspection, the records of qualification tests for chemical analyses are included as well. As an optional feature of the hydraulic cement inspection, CCRL has made available a review of C1157, Standard Performance Specification for Hydraulic Cement. In addition to the normal inspection indicated above, CCRL is adding the examination of equipment and procedures for the following test methods: C186, C1012, and C1038.

### Concrete and Concrete Aggregates Inspection Programs

ASTM C1077, Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation, sets forth criteria for evaluating laboratories which test concrete and concrete aggregates. CCRL uses this standard as the basis for its inspection. Both inspection programs use the mandatory test methods listed in Section 7.2 of C1077. For the concrete, the equipment and procedures are reviewed for the following test methods: C31, C39, C138, C143, C172, C173, C231, C470, C511, C617, C1064 and C1231. For an aggregate inspection, the following test methods are reviewed: C40, C117, C127, C128, C136, C566 and C702. The examination of facilities, equipment, and procedures remain the foundation of the CCRL inspection. To that foundation, we have added a review of laboratory operations, personnel practices, and quality assurance systems which are all requirements of C1077.

Beyond the scope of the mandatory testing of C1077 are the many concrete and concrete aggregate test methods which may be selected as optional methods. For a complete list of optional test methods please consult the enclosed request form. You may select any number of tests from this list to be included in your inspection; an additional fee for each optional method inspected will be assessed. Inclusion of selected optional methods may provide greater overall coverage and greater adaptability to your particular needs. Please circle those optional methods on the enclosed inspection request form which you would like included in your inspection. The inspector will not be able to perform an evaluation of these methods without advance notice.

### Pozzolan Inspection Program

The growing use of fly ash as a construction material has prompted the development of the pozzolan inspection program. This inspection covers the tests necessary to determine compliance with the physical requirements for pozzolans as a mineral admixture and the tests for moisture content and loss on ignition as set forth in ASTM Standard Specification C618. The following standard test methods, with modifications from C311, are reviewed: C109, C114, C151, C157, C185, C187, C188, C227, C430, C441 and C1012. These test methods along with related standards C230, C305, C490, C511 and C778 comprise the inspection.

### Steel Reinforcing Bar Inspection Program

The steel inspection format is based on the equipment and procedures used in tension and bend testing of reinforcing bars. The following test methods are covered in the review: A370, A615, A996 and E8.

### Masonry Inspection Program

The Cement and Concrete Reference Laboratory (CCRL) uses the following standards as the basis for the masonry inspection program: ASTM C67, C90, C140, C270, C1093, and C1552. ASTM C1093, Standard Practice for Accreditation of Testing Agencies for Unit Masonry, provides criteria for evaluating the capability of a laboratory to properly perform tests on masonry materials. ASTM C67, C90, C140 and C270 detail the test procedures and the equipment used.

The masonry inspection program is made up of two separate components: (1) the masonry mortar inspection, and (2) the masonry brick and concrete masonry units inspection. A laboratory may choose either of these components or may request to be evaluated for both components.

As an optional feature of the masonry brick and concrete masonry unit inspection, CCRL has included a review of C1019, Sampling and Testing Grout. This optional method includes a review of equipment and the various procedures required in molding, capping, and breaking of grout prisms.