



Designation: C1077 – 24

Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation¹

This standard is issued under the fixed designation C1077; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This practice identifies and defines the duties, responsibilities, and minimum technical requirements of testing agency personnel and the minimum technical requirements for equipment utilized in testing concrete and concrete aggregates for use in construction.

1.2 This practice provides criteria for the evaluation of the capability of a testing agency to perform designated ASTM test methods on concrete and concrete aggregates. It can be used by an evaluation authority in the inspection or accreditation of a testing agency or by other parties to determine if the agency is qualified to conduct the specified tests.

NOTE 1—Specification E329 provides criteria for the evaluation of agencies that perform the inspection of concrete during placement.

1.3 This practice provides criteria for Inspection Bodies and Accreditation Bodies that provide services for evaluation of testing agencies in accordance with this practice.

1.4 The text of this standard references notes and footnotes, which provide explanatory material and shall not be considered as requirements of this standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

¹ This practice is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.98 on Evaluation of Laboratories.

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2. Referenced Documents

2.1 ASTM Standards:²

- C31/C31M Practice for Making and Curing Concrete Test Specimens in the Field
- C39/C39M Test Method for Compressive Strength of Cylindrical Concrete Specimens
- C78/C78M Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
- C117 Test Method for Materials Finer than 75-μm (No. 200) Sieve in Mineral Aggregates by Washing
- C125 Terminology Relating to Concrete and Concrete Aggregates
- C127 Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate (Withdrawn 2024)³
- C128 Test Method for Relative Density (Specific Gravity) and Absorption of Fine Aggregate
- C136/C136M Test Method for Sieve Analysis of Fine and Coarse Aggregates
- C138/C138M Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
- C143/C143M Test Method for Slump of Hydraulic-Cement Concrete
- C172/C172M Practice for Sampling Freshly Mixed Concrete
- C173/C173M Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
- C231/C231M Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
- C617/C617M Practice for Capping Cylindrical Concrete Specimens
- C802 Practice for Conducting an Interlaboratory Test Program to Determine the Precision of Test Methods for Construction Materials

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.

*A Summary of Changes section appears at the end of this standard

C1064/C1064M Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete

C1231/C1231M Practice for Use of Unbonded Caps in Determination of Compressive Strength of Hardened Cylindrical Concrete Specimens

D75/D75M Practice for Sampling Aggregates

D2419 Test Method for Sand Equivalent Value of Soils and Fine Aggregate

E4 Practices for Force Calibration and Verification of Testing Machines

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

E329 Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection

E1301 Guide for Proficiency Testing by Interlaboratory Comparisons (Withdrawn 2012)³

2.2 *ACI Standards:*

ACI 214-77 Recommended Practice for Evaluation of Strength Test Results of Concrete⁴

2.3 *ISO Standards:*

ISO 17011 Conformity Assessment—General Requirements For Accreditation Bodies Accrediting Conformity Assessment Bodies⁵

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of terms used in this practice, refer to Terminology **C125**.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *evaluation authority, n*—an independent entity, apart from the testing agency being evaluated, that has the capability to provide an unbiased evaluation of the technical activities of concrete and concrete aggregates testing agencies in accordance with **Annex A1** or **Annex A2**.

3.2.1.1 *Discussion*—Two acceptable methods of evaluation are inspection and accreditation, and these evaluations are offered by many evaluation authorities. An inspection is an evaluation of equipment and procedures based on the Test Methods and Procedures section, along with a review of the quality system. An inspection report is the final step in the process for an inspection agency. The testing agency being evaluated performs corrective actions for any deficiencies noted, and these corrections are to be placed with the other inspection documentation as part of the permanent record of the inspection. An accreditation agency uses the results of the inspection report or the results of their own onsite assessment as one phase of the accreditation process. As a separate phase, the accreditation agency also reviews the testing agency's corrective actions for the deficiencies noted and issues a certificate of accreditation once all of the deficiencies have been corrected. There is no universally accepted evaluation authority in the construction materials testing field; therefore,

testing agencies should give careful consideration when selecting an evaluation authority to gain the most benefit from the evaluation. In most cases, a testing agency will select an evaluation authority as a result of requirements in a project specification, or contract, or in response to local codes, or other industry requirements. In those circumstances, the requirements will stipulate the acceptable evaluation authorities. If there are no specific requirements and the evaluation is in anticipation of future work or to compete with other local testing agencies, then the agency should contact the organization(s) most likely to use their services for a list of acceptable evaluation authorities. A list of evaluation authorities is provided in the Qualification of Personnel and Laboratory Evaluation section of the Manual of Aggregate and Concrete Testing.⁶ The list is merely a collection of organizations willing to provide this service and is not an endorsement of any particular organization. Other organizations may also be available to provide this service.

3.2.2 *external technical services, n*—those services required by a testing agency that are provided by another organization.

3.2.3 *quality systems, n*—those internal procedures and practices that an agency utilizes to ensure continued compliance with applicable testing standards for concrete and concrete aggregates.

3.2.4 *testing agency, n*—organization that measures, examines, performs tests, or otherwise determines the characteristics or performance of materials or products. This includes organizations that offer commercial testing services, an in-house quality control function, an academic institution, or any other organization providing the required testing services, whether performed in the laboratory or in the field.

4. Significance and Use

4.1 The testing and inspection of concrete and concrete aggregates are important elements in obtaining quality construction. A testing agency providing these services shall be selected with care.

4.2 A testing agency shall be deemed qualified to perform and report the results of its tests if the agency meets the requirements of this practice. The testing agency services shall be provided under the technical direction of a registered professional engineer.

4.3 This practice establishes essential characteristics pertaining to the organization, personnel, facilities, and quality systems of the testing agency. This practice may be supplemented by more specific criteria and requirements for particular projects.

5. Organization

5.1 The following information shall be readily available for review:

5.1.1 Description of the organization, including:

5.1.1.1 Complete legal name and address of the main office and each testing agency location,

⁴ Available from American Concrete Institute (ACI), P.O. Box 9094, Farmington Hills, MI 48333-9094, <http://www.aci-int.org>.

⁵ Available from International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, <http://www.iso.ch>.

⁶ Manual of Aggregate and Concrete Testing, *Annual Book of ASTM Standards*, Vol 04.02.