



Designation: C1093 – 23

Standard Practice for Accreditation of Testing Agencies for Masonry¹

This standard is issued under the fixed designation C1093; 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.

1. Scope*

1.1 This practice covers the minimum requirements for laboratory personnel, for establishing and maintaining a quality system, and it establishes minimum qualifications for agencies engaged in the testing of masonry materials.

1.2 Criteria are provided for evaluating the capability of an agency to properly perform designated tests on masonry materials, and for establishing guidelines pertaining to an agency's organization, personnel, facilities, and quality system. This practice may be supplemented by more specific criteria and requirements for particular projects.

1.3 This practice can be used as a basis to evaluate testing agencies, and it is intended for use for the qualifying or accrediting of testing agencies, or both, public or private, engaged in the testing of masonry materials.

1.4 *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.*

1.5 *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.*

2. Referenced Documents

2.1 ASTM Standards:²

C67/C67M Test Methods for Sampling and Testing Brick and Structural Clay Tile
C109/C109M Test Method for Compressive Strength of

Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens)

C117 Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing

C136/C136M Test Method for Sieve Analysis of Fine and Coarse Aggregates

C140/C140M Test Methods for Sampling and Testing Concrete Masonry Units and Related Units

C143/C143M Test Method for Slump of Hydraulic-Cement Concrete

C173/C173M Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method

C185 Test Method for Air Content of Hydraulic Cement Mortar

C230/C230M Specification for Flow Table for Use in Tests of Hydraulic Cement

C231/C231M Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

C270 Specification for Mortar for Unit Masonry

C305 Practice for Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency

C470/C470M Specification for Molds for Forming Concrete Test Cylinders Vertically

C780 Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry

C1019 Test Method for Sampling and Testing Grout for Masonry

C1072 Test Methods for Measurement of Masonry Flexural Bond Strength

C1232 Terminology for Masonry

C1314 Test Method for Compressive Strength of Masonry Prisms

C1506 Test Method for Water Retention of Hydraulic Cement-Based Mortars and Plasters

C1552 Practice for Capping Concrete Masonry Units, Related Units and Masonry Prisms for Compression Testing

C1716/C1716M Specification for Compression Testing Machine Requirements for Concrete Masonry Units, Related Units, and Prisms

E4 Practices for Force Calibration and Verification of Testing Machines

¹ This practice is under the jurisdiction of ASTM Committee C15 on Manufactured Masonry Units and is the direct responsibility of Subcommittee C15.07 on Standards for Laboratory Accreditation.

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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.

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

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

3. Terminology

3.1 Definitions:

3.1.1 *quality system*—the organizational structure, responsibilities, procedures, processes, capabilities, and resources for implementing quality management.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *agency*—the organization engaged to test masonry materials as required by a specification or contract.

3.2.2 *quality system manual (QSM)*—a manual describing and documenting an agency's quality system.

3.2.3 *user*—the person or organization engaging the agency to provide tests; or using this practice to evaluate or accredit the agency.

3.3 For additional terms used in this standard, refer to Terminology **C1232**.

4. Significance and Use

4.1 This practice provides the basic minimum criteria for use in evaluating the qualifications of testing agencies for masonry materials. The criteria may be supplemented by more specific criteria and requirements. It can be used as a guide for internal audits by individual users.

4.2 The intent of this practice is to provide a consensus basis for evaluating a testing agency, with respect to that agency's capability to objectively and competently provide the specific services needed by the user.

4.3 This practice may be used as a basis for accreditation.

5. Responsibilities and Duties

5.1 The agency shall ensure that only tests for which it is adequately equipped and staffed are performed.

5.2 The agency shall ensure that personnel perform only tests for which they are adequately trained, qualified, and certified in accordance with applicable specifications.

5.3 The agency shall ensure that all equipment is properly maintained in good operating condition and is calibrated or verified as applicable.

5.4 The agency shall perform all testing in accordance with appropriate standards and quality control criteria. Documents unique to the user shall be furnished to the agency.

6. General Capabilities

6.1 *Laboratory Testing*—The laboratory testing services of the masonry materials testing agency shall include some or all of the following capabilities:

6.1.1 Testing of masonry units in the laboratory,

6.1.2 Testing of masonry mortars in the laboratory, and

6.1.3 Testing of aggregates for compliance with specification requirements.

NOTE 1—Since the requirements for construction control can vary from project to project depending upon the nature of the type, location, and intended use of the masonry in the project, the capability of the agency for

testing should be that necessary to accomplish construction control for the user's specific project or special requirements.

7. Personnel Qualifications

7.1 *Management and Supervision*—All relevant testing services shall be provided under the Full-Time technical direction of a registered professional Engineer, with at least five years of experience in inspecting and testing masonry materials or a person of equivalent science-oriented education and experience.

7.2 *Supervising Technician*—The supervising technician(s) shall have at least five years experience performing tests on materials, with at least two years testing masonry materials.

7.2.1 Personnel supervising laboratory testing shall have current certification(s). The certification(s) shall conform to the requirements in 7.4. Certification is not required for test methods listed in 7.2.1.1 that are outside of the scope of the testing agency.

7.2.1.1 The certification(s) shall include a written examination and performance examination for the following standards: Test Methods **C140/C140M**, **C780**, **C1019**, and Practice **C1552**. Certification(s) for laboratory testing shall include a written examination for the following standards: Specification **C270** and Test Method **C1314**.

7.2.2 Personnel supervising field testing shall have current certification(s). The certification(s) shall conform to the requirements in 7.4. Certification is not required for test methods listed in 7.2.2.1 that are outside of the scope of the testing agency.

7.2.2.1 The certification(s) shall include a written examination and performance examination for the following standards: Test Methods **C140/C140M**, **C780**, and **C1019**. The certification shall include a written examination for the following standard: Test Method **C1314**.

7.3 *Technicians*—Personnel performing laboratory and field testing shall possess current certifications that include each standard identified in 7.3.1 and 7.3.2, and shall conform to 7.4. Certification is not required for test methods listed in 7.3.1 and 7.3.2 that are outside of the scope of the testing agency.

7.3.1 Certification(s) for laboratory testing shall include a written examination and performance examination for the following standards: Test Methods **C140/C140M**, **C780**, **C1019**, and Practice **C1552**. Certification(s) for laboratory testing shall include a written examination for the following standards: Specification **C270** and Test Method **C1314**.

7.3.2 Certification(s) for field testing shall include a written examination and performance examination for the following standards: Test Methods **C140/C140M**, **C780**, and **C1019**. Certification(s) for field testing shall include a written examination for the following standard: Test Method **C1314**.

7.4 The technician certification program shall meet the following criteria:

7.4.1 The written examination shall cover the test method or practice, including, as applicable: the significance of the test or practice, sampling and specimen preparation procedures, calculations, and reporting of results,

7.4.2 The performance examination shall include a demonstration of the test method or practice, to document the