



Standard Practice for Examination and Sampling of Hardened Concrete in Constructions¹

This standard is issued under the fixed designation C823/C823M; 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 outlines procedures for visual examination and sampling of hardened concrete in constructions. Reference is made to the examination and sampling of concrete in prefabricated building units, precast products, and laboratory specimens.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.3 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- C42/C42M Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
- C125 Terminology Relating to Concrete and Concrete Aggregates
- C215 Test Method for Fundamental Transverse, Longitudinal, and Torsional Resonant Frequencies of Concrete Specimens
- C295 Guide for Petrographic Examination of Aggregates for Concrete
- C457 Test Method for Microscopical Determination of Parameters of the Air-Void System in Hardened Concrete
- C597 Test Method for Pulse Velocity Through Concrete

¹ This practice is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates, and is the direct responsibility of Subcommittee C09.65 on Petrography.

Current edition approved April 1, 2012. Published April 2012. Originally approved in 1975. Last previous edition approved in 2007 as C823-07. DOI: 10.1520/C0823_C0823M-12.

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.

- C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials
- C856 Practice for Petrographic Examination of Hardened Concrete
- E105 Practice for Probability Sampling of Materials
- E122 Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process
- E141 Practice for Acceptance of Evidence Based on the Results of Probability Sampling

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminology C125.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *concrete constructions, n*—any object, unit, or structure that has been built of hydraulic cement concrete.

3.2.2 *category of concrete, n*—a specified level of quality in concrete that is observed to be in a definable range of condition as a result of service or test exposure, as distinguished from concrete in the same or related constructions that is either of differing specified quality or of the same specified quality but in observably different condition at the time of examination. It is also used to refer to concrete having a certain attribute or attributes. (see the Sampling Plan Section).

4. Significance and Use

4.1 The examination may provide a basis for laying out in situ testing of the concrete.

4.2 The sampling can provide materials for petrographic examination, in accordance with Practice C856, chemical or physical analytical procedures, or any of a wide variety of destructive or nondestructive tests to determine physical, mechanical, or structural properties of the concrete.

4.3 The results of examination and sampling carried out in accordance with this practice may be used for a variety of purposes and to serve a variety of objectives, some of which are discussed in the Procedural Plan Section.

5. Qualifications and Instruction of Personnel

5.1 *Qualifications*—The examination, formulation of sampling plan, and the sampling procedures shall be performed by

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