



Designation: C1768/C1768M – 12 (Reapproved 2017)

## Standard Practice for Accelerated Curing of Concrete Cylinders<sup>1</sup>

This standard is issued under the fixed designation C1768/C1768M; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This practice covers two procedures for making and curing cylindrical specimens of concrete under conditions that increase the rate of hydration at early ages. The procedures are: A—Warm Water Method and B—Autogenous Curing Method.

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. (Warning—Fresh hydraulic cementitious mixtures are caustic and may cause chemical burns to skin and tissue upon prolonged exposure.<sup>2</sup>)*

1.4 *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:*<sup>3</sup>

C31/C31M Practice for Making and Curing Concrete Test Specimens in the Field

C39/C39M Test Method for Compressive Strength of Cylindrical Concrete Specimens

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.61 on Testing for Strength.

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<sup>2</sup> See Section on Safety Precautions, Manual of Aggregate and Concrete Testing, *Annual Book of ASTM Standards*, Vol. 04.02.

<sup>3</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

C125 Terminology Relating to Concrete and Concrete Aggregates

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

C192/C192M Practice for Making and Curing Concrete Test Specimens in the Laboratory

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

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

C918/C918M Test Method for Measuring Early-Age Compressive Strength and Projecting Later-Age Strength

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

### 3. Terminology

3.1 *Definitions:*

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

### 4. Summary of Practice

4.1 Molded concrete cylindrical specimens are cured under conditions that increase the early-age concrete temperature and the rate of hydration. This permits the specimens to develop a significant portion of their ultimate properties within a time period ranging from 24 to 49 h, depending upon the procedure used. In Procedure A, specimens are stored in a warm water bath for 24 h. In Procedure B, specimens are stored for 48 h in insulated curing containers in which the elevated curing temperature is obtained from heat of hydration of the cement. If specimens are to be used for estimating strength potential in accordance with Test Method C918/C918M, specimen temperature is monitored during the accelerated curing period.

4.2 Table 1 summarizes important characteristics of these curing procedures.