



Designation: C807 – 13

# Standard Test Method for Time of Setting of Hydraulic Cement Mortar by Modified Vicat Needle<sup>1</sup>

This standard is issued under the fixed designation C807; 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 test method covers the determination of the time of setting of hydraulic cement mortar by means of the modified Vicat needle.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this 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 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

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:*<sup>3</sup>

[C109/C109M Test Method for Compressive Strength of Hydraulic Cement Mortars \(Using 2-in. or \[50-mm\] Cube Specimens\)](#)

[C183 Practice for Sampling and the Amount of Testing of Hydraulic Cement](#)

[C187 Test Method for Amount of Water Required for Normal Consistency of Hydraulic Cement Paste](#)

[C219 Terminology Relating to Hydraulic Cement](#)

[C305 Practice for Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency](#)

[C511 Specification for Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes](#)

[C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials](#)

[C778 Specification for Standard Sand](#)

[C845 Specification for Expansive Hydraulic Cement](#)

[C1005 Specification for Reference Masses and Devices for Determining Mass and Volume for Use in the Physical Testing of Hydraulic Cements](#)

[D1193 Specification for Reagent Water](#)

## 3. Terminology

3.1 Terms used in this standard are defined in Terminology [C219](#).

## 4. Summary of Test Method

4.1 A mortar is prepared with the cement to be tested, using stipulated quantities of cement and water, and sufficient standard sand to produce a required consistency as determined by a stipulated penetration using the plunger of the modified Vicat apparatus. Mortar of the proper consistency is then tested for time of setting, using the needle of the modified Vicat apparatus for the determination of a stipulated penetration. The time required to obtain the stipulated penetration of the modified Vicat needle is the time of setting.

## 5. Significance and Use

5.1 The purpose of this test method is to establish whether or not a cement complies with a specification limit on time of setting. It has been found to be particularly applicable for the determination of the setting time of expansive cements (see Specification [C845](#)).

## 6. Apparatus

6.1 *Tamper and Trowel*, conforming to the requirements of Test Method [C109/C109M](#). In addition, the edges of the trowel

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee C01 on Cement and is the direct responsibility of Subcommittee C01.30 on Time of Set.

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<sup>2</sup> See the section on Safety, Manual of Cement Testing, *Annual Book of ASTM Standards*, Vol 04.01.

<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.

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