



Standard Test Method for Determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method)¹

This standard is issued under the fixed designation C1567; 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 test method permits detection within 16 days of the potential for deleterious alkali-silica reaction of combinations of cementitious materials and aggregate in mortar bars. The cementitious materials are composed of various proportions of hydraulic cement, pozzolans and ground granulated blast-furnace slag.

1.2 The test results are only valid for the specific combinations of pozzolan, slag, and reactive aggregates tested.

1.3 This test is not suitable for evaluating the potential for deleterious reaction of combinations of hydraulic cement and aggregate (that is, in the absence of pozzolans or ground granulated blast-furnace slag).

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in 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 and health practices and determine the applicability of regulatory limitations prior to use. A specific precautionary statement is given in the section on Reagents.*

2. Referenced Documents

2.1 ASTM Standards:²

- C109/C109M Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
- C125 Terminology Relating to Concrete and Concrete Aggregates

¹ This test method is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.26 on Chemical Reactions.

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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.

- C127 Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
- C128 Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
- C150 Specification for Portland Cement
- C151 Test Method for Autoclave Expansion of Hydraulic Cement
- C305 Practice for Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency
- C490 Practice for Use of Apparatus for the Determination of Length Change of Hardened Cement Paste, Mortar, and Concrete
- C494/C494M Specification for Chemical Admixtures for Concrete
- C511 Specification for Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes
- C618 Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
- C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials
- C989 Specification for Slag Cement for Use in Concrete and Mortars
- C1240 Specification for Silica Fume Used in Cementitious Mixtures
- C1260 Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
- C1293 Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction
- C1437 Test Method for Flow of Hydraulic Cement Mortar
- D1193 Specification for Reagent Water
- E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms relating to concrete or aggregates, see Terminology C125.

3.2 *relative density (OD), n*—as defined in Test Methods C127 or C128, for coarse and fine aggregates, respectively.

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