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.

Designation: C989/C989M – 16ε1

Standard Specification for Slag Cement for Use in Concrete and Mortars[1]

This standard is issued under the fixed designation C989/C989M; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

ε[1] NOTE—Footnote 4 was corrected editorially in March 2017.

1. Scope*

1.1 This specification covers slag cement for use as a cementitious material in concrete and mortar.

NOTE 1—The material described in this specification may be used for blending with portland cement to produce a cement meeting the requirements of Specification C595/C595M or as a separate ingredient in concrete or mortar mixtures. The material may also be useful in a variety of special grouts and mortars, and when used with an appropriate activator, as the principal cementitious material in some applications.

NOTE 2—Information on technical aspects of the use of the material described in this specification is contained in Appendix X1, Appendix X2, and Appendix X3. More detailed information on that subject is contained in ACI 233R-03.[2]

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, the inch-pound units are shown in brackets. 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. Values are stated in only SI units when inch-pound units are not used in practice.

1.3 The text of this standard references notes and footnotes that provide explanatory information. These notes and footnotes (excluding those in tables) shall not be considered as requirements of this standard.

1.4 The following safety hazards caveat pertains only to the test methods described in this specification. *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:*[3]

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

C114 Test Methods for Chemical Analysis of Hydraulic Cement

C125 Terminology Relating to Concrete and Concrete Aggregates

C150/C150M Specification for Portland Cement

C185 Test Method for Air Content of Hydraulic Cement Mortar

C188 Test Method for Density of Hydraulic Cement

C204 Test Methods for Fineness of Hydraulic Cement by Air-Permeability Apparatus

C430 Test Method for Fineness of Hydraulic Cement by the 45-µm (No. 325) Sieve

C452 Test Method for Potential Expansion of Portland-Cement Mortars Exposed to Sulfate

C465 Specification for Processing Additions for Use in the Manufacture of Hydraulic Cements

C595/C595M Specification for Blended Hydraulic Cements

C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials

C1012/C1012M Test Method for Length Change of Hydraulic-Cement Mortars Exposed to a Sulfate Solution

C1038/C1038M Test Method for Expansion of Hydraulic Cement Mortar Bars Stored in Water

C1437 Test Method for Flow of Hydraulic Cement Mortar

C1778 Guide for Reducing the Risk of Deleterious Alkali-Aggregate Reaction in Concrete

[1] This specification is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.27 on Ground Slag.

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[2] ACI 233R-03 Slag Cement in Concrete and Mortar. Available from American Concrete Institute (ACI), P.O. Box 9094, Farmington Hills, MI 48333-9094, http://www.concrete.org.

[3] 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**

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