



Designation: **C219 – 14a C219 – 19**

## Standard Terminology Relating to Hydraulic Cement<sup>1</sup>

This standard is issued under the fixed designation C219; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

### 1. Scope\*

1.1 This terminology defines terms relating to hydraulic cements, their components, characteristics, properties, and the testing thereof. Some terms may have wider application than just to hydraulic cement.

1.2 See individual standards for terms applicable primarily therein, including meanings that may be more restrictive than those given here, and for explanations and descriptions of terms as they apply to those standards.

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

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>2</sup>

[C11 Terminology Relating to Gypsum and Related Building Materials and Systems](#)

[C51 Terminology Relating to Lime and Limestone \(as used by the Industry\)](#)

[C114 Test Methods for Chemical Analysis of Hydraulic Cement](#)

[C114 Test Methods for Chemical Analysis of Hydraulic Cement](#)

[C125 Terminology Relating to Concrete and Concrete Aggregates](#)

[C294 Descriptive Nomenclature for Constituents of Concrete Aggregates](#)

[C595/C595M Specification for Blended Hydraulic Cements](#)

~~C1328~~[C1328/C1328M Specification for Plastic \(Stucco\) Cement](#)

~~C1329~~[C1329/C1329M Specification for Mortar Cement](#)

2.2 *ACI Standard:*

[ACI 116R Cement and Concrete Terminology](#)<sup>3</sup>

### 3. Significance and Use

3.1 In definitions of cements, ingredients are cited only when they are inherent to the definition, for example portland-pozzolan cement. For ingredients and their quantity limits, if any, that are permitted or prohibited by a specification for a particular cement, see the applicable specification for that cement.

3.2 In definitions of materials including cements, the method of production is included only if it is inherent to the definition.

3.3 Related terms may be found in other terminology documents such as Terminology [C11](#), Terminology [C51](#), Terminology [C125](#), and ACI 116R.

### 4. Terminology

**addition, n**—a material that is interground or blended in limited amounts into a hydraulic cement during manufacture.

<sup>1</sup> This terminology is under the jurisdiction of ASTM Committee C01 on Cement and is the direct responsibility of Subcommittee C01.91 on Terminology. Current edition approved Aug. 1, 2014; June 1, 2019. Published August 2014; June 2019. Originally approved in 1948. Last previous edition approved in 2014 as C219 – 14; C219 – 14a. DOI: 10.1520/C0219-14A.10.1520/C0219-19

<sup>2</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.

<sup>3</sup> Available from American Concrete Institute (ACI), P.O. Box 9094, Farmington Hills, MI 48333-9094, <http://www.aci-int.org>.

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

DISCUSSION—

Two classes of additions are recognized as defined below.

*functional addition, n*—an addition introduced to modify ~~one~~ or more properties of a hydraulic cement.

~~air-entraining addition, n~~—~~a functional addition that will~~ ~~entrain air in mortar or concrete.~~

~~processing addition, n~~—~~an addition introduced to aid in~~ ~~the~~ manufacture or handling, or both, of a hydraulic cement.

**air-entraining addition, n**—see addition; functional addition; ~~addition~~ ~~air-entraining addition.~~ that will entrain air in mortar or concrete.

**air content, n**—of freshly mixed mortar the volume of air (and other gases) in mortar, expressed as a percentage of total volume of mortar.

**air-entraining hydraulic cement, n**—a hydraulic cement containing an air-entraining addition in such amount as to cause air to be entrained in mortar within specified limits when measured by the prescribed method.

**alkali equivalent, n**—deprecated term; see **equivalent alkalies**.

**aluminous cement, n**—deprecated term.

**anhydrite, n**—see **calcium sulfate**.

**blast-furnace slag, n**—the nonmetallic product, consisting essentially of silicates and aluminosilicates of calcium and other bases, that is developed in a molten condition simultaneously with iron in a blast furnace.

**blended hydraulic cement, n**—a hydraulic cement consisting of two or more inorganic constituents (at least one of which is not portland cement or portland cement clinker) which separately or in combination contribute to the strength-gaining properties of the cement, (made with or without other constituents, processing additions and functional additions, by intergrinding or other blending).

~~portland blast-furnace slag cement, n~~—~~a hydraulic cement~~ ~~consisting~~ ~~consisting~~ of an intimate and uniform blend of portland ~~cement~~ ~~cement~~ and granulated blast-furnace slag or slag cement ~~produced~~ ~~produced~~ by intergrinding portland cement clinker and ~~granulated~~ ~~granulated~~ blast-furnace slag or slag cement; by blending ~~portland~~ ~~portland~~ cement and slag cement; or by a combination of ~~intergrinding~~ ~~intergrinding~~ and blending, in which the amount of the ~~granulated~~ ~~granulated~~ blast-furnace slag or slag cement constituent is ~~within~~ ~~within~~ specified ~~limits~~ ~~limits~~

~~portland-limestone cement, n~~—~~a hydraulic cement~~ ~~consisting~~ ~~consisting~~ of an intimate and uniform blend of portland ~~cement~~ ~~and~~ ~~consisting~~ of an intimate and uniform blend of portland cement and limestone produced by intergrinding portland

~~cement clinker~~ ~~and~~ ~~cement clinker~~ ~~and~~ ~~limestone~~; by blending portland cement ~~and~~ ~~and~~ finely divided limestone; or by a combination of ~~intergrinding~~ ~~intergrinding~~ and blending, in which the amount of the ~~limestone~~ ~~limestone~~ constituent is within specified limits.

~~portland-pozzolan cement, n~~—~~a hydraulic cement~~ ~~consisting~~ ~~consisting~~ of an intimate and uniform blend of portland ~~cement~~ ~~cement~~ or portland blast-furnace slag cement and fine ~~pozzolan~~ ~~pozzolan~~ produced by intergrinding portland cement ~~clinker~~ ~~clinker~~ and pozzolan; by blending portland cement ~~or~~ ~~or~~ portland blast-furnace slag cement and finely divided ~~pozzolan~~ ~~pozzolan~~; or by a combination of intergrinding and ~~blending~~ ~~blending~~, in which the amount of the pozzolan constituent ~~is~~ ~~is~~ within specified limits.

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