



Designation: C1141/C1141M – 08

Standard Specification for Admixtures for Shotcrete¹

This standard is issued under the fixed designation C1141/C1141M; 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 specification covers materials proposed for use as admixtures to be added to a portland-cement shotcrete mixture for the purpose of altering the properties of the mixture.

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.*

2. Referenced Documents

2.1 ASTM Standards:²

C125 Terminology Relating to Concrete and Concrete Aggregates

C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates

C138/C138M Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete

C173/C173M Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method

C183 Practice for Sampling and the Amount of Testing of Hydraulic Cement

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

C260 Specification for Air-Entraining Admixtures for Concrete

C311 Test Methods for Sampling and Testing Fly Ash or

Natural Pozzolans for Use in Portland-Cement Concrete
C494/C494M Specification for Chemical Admixtures for Concrete

C618 Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete

C979 Specification for Pigments for Integrally Colored Concrete

C989 Specification for Slag Cement for Use in Concrete and Mortars

C1240 Specification for Silica Fume Used in Cementitious Mixtures

C1398 Test Method for The Laboratory Determination of the Time of Setting of Hydraulic-Cement Mortars Containing Additives for Shotcrete by the Use of Gillmore Needles (Withdrawn 2010)³

C1438 Specification for Latex and Powder Polymer Modifiers in Hydraulic Cement Concrete and Mortar

D98 Specification for Calcium Chloride

2.2 ACI Documents:

318 Building Code Requirements for Structural Concrete⁴

3. Terminology

3.1 For definitions of terms used in this standard, refer to Terminology C125. <https://standards.astro.org/DocumentPage.aspx?DocumentID=C1141M-08>

4. Classification

4.1 This specification recognizes grades of admixtures, used in shotcrete made by either of two processes, as follows:

4.1.1 *Type I*—Dry mix shotcrete.

4.1.1.1 *Grade 1*—Accelerating admixture, conventional.

4.1.1.2 *Grade 2*—Retarding admixture.

4.1.1.3 *Grade 3*—Pozzolanic admixture.

4.1.1.4 *Grade 4*—Metallic iron admixture.

4.1.1.5 *Grade 5*—Coloring admixture.

4.1.1.6 *Grade 6*—Organic polymer admixture.

4.1.1.7 *Grade 7*—Not applicable.

4.1.1.8 *Grade 8*—Not applicable.

4.1.1.9 *Grade 9*—Accelerating admixture, quick-setting.

4.1.2 *Type II*—Wet-mix shotcrete.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American Concrete Institute (ACI), P.O. Box 9094, Farmington Hills, MI 48333-9094, <http://www.concrete.org>.

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

