



Designation: **C937–10 C937 – 16**

Standard Specification for Grout Fluidifier for Preplaced-Aggregate Concrete¹

This standard is issued under the fixed designation C937; 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 (ϵ) indicates an editorial change since the last revision or reappraisal.

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

1. Scope*

1.1 This specification covers fluidifier for grout used for preplaced-aggregate (PA) concrete.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information purposes only. No other units of measurement are included in this standard.

1.3 The following precautionary caveat pertains only to the test method portion, Section 98, of this standard: *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

~~C33~~C33/C33M Specification for Concrete Aggregates

C125 Terminology Relating to Concrete and Concrete Aggregates

~~C150~~C150/C150M Specification for Portland Cement

C219 Terminology Relating to Hydraulic Cement

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

C637 Specification for Aggregates for Radiation-Shielding Concrete

C938 Practice for Proportioning Grout Mixtures for Preplaced-Aggregate Concrete

~~C939~~C939/C939M Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method)

C940 Test Method for Expansion and Bleeding of Freshly Mixed Grouts for Preplaced-Aggregate Concrete in the Laboratory

C941 Test Method for Water Retentivity of Grout Mixtures for Preplaced-Aggregate Concrete in the Laboratory

C942 Test Method for Compressive Strength of Grouts for Preplaced-Aggregate Concrete in the Laboratory

C953 Test Method for Time of Setting of Grouts for Preplaced-Aggregate Concrete in the Laboratory

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of terms used in this test method, refer to Terminologies C125 and C219.

4. Ordering Information

4.1 The purchaser shall specify the material desired as “grout fluidifier for preplaced-aggregate concrete.” The material shall meet the requirements of this specification.

5. Materials

5.1 Grout ingredients shall conform to the following requirements:

5.1.1 Portland cement shall meet the requirements of Specification ~~C150~~C150/C150M for the type to be used.

5.1.2 Pozzolan shall meet the requirements of Specification C618.

¹ This specification is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.41 on Hydraulic Cement Grouts.

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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.

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

TABLE 1 Expansion Limits

Alkali Content of Cement, % Expressed as Na ₂ O	Expansion Limits, %
0.80 or more	7 to 14
0.40 to 0.79	5 to 12
0.39 or less	3 to 9

TABLE 1 Physical Requirements for Grout with Fluidifier

Reduction in mixing water, min, % of control (Test Method C939/C939M)	<u>3</u>
Expansion Limits, %:	...
Expansion, 3 h after mixing, (Test Method C940) with the fluidifier:	...
0.80 or more Alkali Content of Cement, % expressed as Na ₂ O	7 to 14
0.40 to 0.79 Alkali Content of Cement, % expressed as Na ₂ O	5 to 12
0.39 or less Alkali Content of Cement, % expressed as Na ₂ O	3 to 9
Bleeding, 3 h after mixing, (Test Method C940), max, % with the fluidifier	<u>2</u>
Increase in water retentivity (Test Method C941), min, % of control	<u>60</u>
Initial setting time, min, h (Test Method C953)	<u>4</u>
Final setting time, max, h (Test Method C953)	<u>24</u>
Compressive strength at 7 days and 28 days, (Test Method C942), min, % of control	<u>90</u>

<https://standards.iteh.ai/catalog/standards/siv/3a1d61d0-d059-4c03-9c15-99251641692c/astm-c937-16>

5.1.3 Fine aggregate shall meet the requirements of Specification [C33C33/C33M](#) except that grading shall conform to Specification [C637](#), Table number 2, Grading 1 for Fine Aggregate.

6. Physical Requirements

6.1 The fluidifier, when tested in grout as specified herein, shall conform to the following requirements:

Reduction in mixing water, min, % of control (Test Method C941)	-
Expansion, 3 h after mixing; (Test Method C940)	3
Bleeding, 3 h after mixing, (Test Method C940); —max, %	-
Increase in water retentivity (Test Method C941); —min, % of control	2
Initial setting time, min, h (Test Method C953)	-
Final setting time, max, h (Test Method C953)	60
Compressive strength at 7 days and 28 days, (Test Method C942), min, % of control	4
	24
	-
	90

Table 1.

7. Composition

7.1 The fluidifier shall be composed of materials that will yield a product having the properties stipulated under Physical Requirements when tested in accordance with this specification.