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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)¹

This standard is issued under the fixed designation C 1107; 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 Department of Defense.

1. Scope

1.1 This specification covers three grades of packaged dry, hydraulic cement grout (nonshrink) intended for use under applied load (such as to support a structure, a machine, and the like) where a change in height below initial placement height is to be avoided.

1.2 Grouts covered are composed of hydraulic cement, fine aggregate and other ingredients. They require only the addition of mixing water for use.

1.3 The values stated in inch-pound units are to be regarded as the standard. The SI units in parentheses are for information only.

1.4 The following safety hazards caveat pertains only to the test method portion of 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:

C 109/C 109M Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens)²

C 138 Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete³

C 157 Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete³

C 185 Test Method for Air Content of Hydraulic Cement Mortar²

C 305 Practice for Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency²

C 702 Practice for Reducing Field Samples of Aggregate to Testing Size³

C 827 Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures³

¹ This specification is under the jurisdiction of ASTM Committee C-9 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.43 on Packaged, Dry, Combined Materials.

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² Annual Book of ASTM Standards, Vol 04.01.

³ Annual Book of ASTM Standards, Vol 04.02.

C 1090 Test Method for Measuring Change in Height of Cylindrical Specimens for Hydraulic-Cement Grout³

3. Classification

3.1 This Specification covers three grades of grout, classified in accordance with the volume-control mechanism exhibited by the grout after being mixed with water.

3.1.1 *Grade A Pre-Hardening Volume-Adjusting*—Volume control of grout is caused by expansion before hardening occurs.

3.1.2 *Grade B Post-Hardening Volume-Adjusting*—Volume control of grout is caused by expansion after grout hardens.

3.1.3 *Grade C Combination Volume-Adjusting*—Volume control of grout is caused by a combination of both mechanisms.

4. Ordering Information

4.1 When the purchaser specifies that properties of the packaged, dry grout meet the requirements of this specification, the grade of grout desired shall also be specified and which, if any, of the optional requirements apply.

4.2 When the grout is to be used in contact with stressed tendons or other corrosion-sensitive, load-bearing structural members, the purchaser shall supply this information to the manufacturer and obtain assurances that the material meets relevant chloride, nitrite, nitrate, sulfide, and sulfate requirements, and any other material limitations imposed by the applicable codes and standards (Note 1).

4.3 When the grout is to be used in abnormal or aggressive environments, the purchaser shall supply this information to the manufacturer and obtain assurance that the grout has a successful history of performance in the same or similar exposures.

NOTE 1—Since all conditions of use cannot be anticipated, this specification requires nonshrink grout to exhibit no shrinkage when tested in a laboratory-controlled, moist-cured environment, and requires only the reporting of the observed height change, usually shrinkage, when test specimens are subjected to some degree of drying. It is suggested that users consult with manufacturers on specific applications to determine the applicability of specific test results.

5. Materials

5.1 The materials used as ingredients in packaged, dry, grout include hydraulic cement, fine aggregate, and other ingredients.