



Designation: C780 – 16a

Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry¹

This standard is issued under the fixed designation C780; 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.

INTRODUCTION

This test method provides a standard procedure for sampling and testing mortars for composition and plastic and hardened properties, either before or during actual construction. The procedures outlined in the Annexes are considered applicable for evaluating various combinations of portland cement, lime, and masonry cement for mortars common to plain and reinforced unit masonry construction.

The test procedures describe methods for the measurement of mortar composition and mortar properties. No attempt is made to claim or substantiate specific correlations between the measured properties and mortar performance in the masonry. However, data from these test methods can be combined with other information to formulate judgments about the quality of the masonry.

Testing using these procedures is limited to the preconstruction evaluation of masonry mortars within the laboratory, to the evaluation of masonry mortars at the construction site, and in establishing the degree of quality control exercised during mortar production at the construction site.

1. Scope*

1.1 This test method covers procedures for the sampling and testing of mortars for composition and for their plastic and hardened properties, either before or during their actual use in construction.

NOTE 1—Guide C1586 provides guidance on evaluating mortar and clarifies the purpose of both this test method and Specification C270.

NOTE 2—The testing agency performing this test method should be evaluated in accordance with Practice C1093.

1.2 *Preconstruction Evaluation*—This test method permits comparisons of mortars made from different materials under simulated field conditions. It is also used to establish baseline values for comparative evaluation of field mortars.

1.3 *Construction Evaluation*—Use of this method in the field provides a means for quality assurance of field-mixed mortar. It includes methods for verifying the mortar mix proportions, comparing test results for field mortars to preconstruction testing, and determining batch-to-batch uniformity of the mortar.

1.4 The test results obtained under this test method are not required to meet the minimum compressive values in accordance with the property specifications in Specification C270.

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 *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.* For specific hazards statements, see Section 8.

2. Referenced Documents

2.1 *ASTM Standards:*²

C39/C39M Test Method for Compressive Strength of Cylindrical Concrete Specimens

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

¹ This test method is under the jurisdiction of ASTM Committee C12 on Mortars and Grouts for Unit Masonry and is the direct responsibility of Subcommittee C12.02 on Research and Methods of Test.

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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