



Standard Test Methods for Measurement of Masonry Flexural Bond Strength¹

This standard is issued under the fixed designation C1072; 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.

^{ε1} NOTE—Editorially corrected **Table X1.1** in March 2014.

1. Scope*

1.1 These test methods evaluate the flexural bond strength, normal to the bed joints, of masonry built of manufactured masonry units. Sampling and testing procedures are referenced, and terms are defined. Three different specimen fabrication methods are specified, each for a different purpose:

1.1.1 The first method is the “Test Method for Laboratory-Prepared Specimens.” Its purpose is to compare the bond strengths (under the given conditions) of masonry mortars. It could be used, for example, to check the quality of mortar products after production, or to indicate the bond strength (under the given conditions) of a mortar product without requiring the product to be tested in combination with many different units. It is not intended to represent field conditions. It uses standard concrete masonry units. Mortars are batched by weight equivalents of volume proportions and are mixed to a prescribed flow. Prisms are constructed using a jig and are bag-cured.

1.1.2 The second method is the “Test Method for Field-Prepared Specimens.” Its purpose is to evaluate the bond strength (under the given conditions) of a particular unit-mortar combination, either for preconstruction evaluation of materials or for quality control purposes during construction. Mortars are batched conventionally, and the flow is not prescribed. Prisms are constructed conventionally (no jig) and are bag-cured.

1.1.3 The third method is the “Test Method for Prisms Removed from Existing Masonry.” Its purpose is to evaluate the bond strength of unit-mortar combinations of prisms cut from existing walls.

1.1.4 The three methods are not consistent, nor are they intended to be. They are intended to be used for three different purposes. To make this clear, the three methods are presented separately.

1.1.5 **Appendix X1** suggests two possible criteria for assessing the bond strength values obtained using these test methods.

These possible evaluation criteria are given for illustration only and are not mandatory.

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

- C67** Test Methods for Sampling and Testing Brick and Structural Clay Tile
- C140** Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
- C230/C230M** Specification for Flow Table for Use in Tests of Hydraulic Cement
- C270** Specification for Mortar for Unit Masonry
- C780** Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
- C1232** Terminology of Masonry
- C1437** Test Method for Flow of Hydraulic Cement Mortar
- C1532** Practice for Selection, Removal, and Shipment of Manufactured Masonry Units and Masonry Specimens from Existing Construction

2.2 Other Documents:

- TMS 402/ACI 530/ASCE 5** Building Code Requirements for Masonry Structures³

¹ These test methods are under the jurisdiction of ASTM Committee **C15** on Manufactured Masonry Units and are the direct responsibility of Subcommittee **C15.04** on Research.

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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.

³ Available from the Masonry Standards Joint Committee, <http://www.masonrystandards.org>.