



Standard Test Method for Pullout Resistance of Ties and Anchors Embedded in Masonry Mortar Joints¹

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^{ε1} NOTE—Keywords were added to this standard in April 2000.

INTRODUCTION

The attachment of masonry walls to building exteriors has been based largely on experience and professional judgment. Codes and standards requirements relating to the attachment of masonry veneer and nonload-bearing masonry walls generally specify the size and spacing of the fasteners to be provided (ties or anchors) rather than the forces to be resisted. In addition, there are very limited data available on the structural performance of most types of fasteners currently used in masonry construction.

This test method is recommended for determining conservative ultimate pullout values of masonry fasteners under conditions that approach those usually found in the upper courses of masonry wall construction, which experience little or practically no vertical load restraint. Its use is recommended until more comprehensive methods are developed which can evaluate, economically, the capacity of masonry ties and anchors to resist pullout loads, giving due consideration to service parameters such as expanse of surrounding wall area and in-plane dead loads.

1. Scope

1.1 This test method provides procedures for determining the ability of individual masonry ties and anchors to resist extraction from a masonry mortar joint.

1.2 Two laboratory testing procedures are provided for use with test specimens which consist of a masonry tie or anchor embedded in mortar between twin stack-bonded masonry units.

1.2.1 *Procedure A*—For use with small (brick-size) masonry units.

1.2.2 *Procedure B*—For use with large (block-size) masonry units.

1.3 *This standard does not purport to address 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 67 Test Methods for Sampling and Testing Brick and Structural Clay Tile²

C 109 Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens)³

C 140 Test Method of Sampling and Testing Concrete Masonry Units²

C 144 Specification for Aggregate for Masonry Mortar²

C 270 Specification for Mortar for Unit Masonry²

E 4 Practices for Force Verification of Testing Machines⁴

E 6 Terminology Relating to Methods of Mechanical Testing⁴

E 171 Specification for Standard Atmospheres for Conditioning and Testing Materials⁵

E 575 Practice for Reporting Data from Structural Tests of Building Constructions, Elements, Connections, and Assemblies⁶

¹ This test method is under the jurisdiction of ASTM Committee E-6 on Performance of Buildings and is the direct responsibility of Subcommittee E06.13 on Structural Performance of Connections in Building Constructions.

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² *Annual Book of ASTM Standards*, Vol 04.05.

³ *Annual Book of ASTM Standards*, Vol 04.01.

⁴ *Annual Book of ASTM Standards*, Vol 03.01.

⁵ *Annual Book of ASTM Standards*, Vol 15.09.

⁶ *Annual Book of ASTM Standards*, Vol 04.11.