



Standard Test Method for Piles Under Static Axial Compressive Load¹

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

€¹ NOTE—Section 10 was added editorially in May 1994.

INTRODUCTION

This standard has been prepared to cover routine methods of testing to determine if a pile has adequate bearing capacity. The provisions permit the introduction of more detailed requirements and procedures when required to satisfy the objectives of the test program. While the procedures herein produce a relationship between applied load and pile settlement, the results may not represent long-term performance.

1. Scope

1.1 This test method covers procedures for testing vertical or batter piles individually or groups of vertical piles to determine response of the pile or pile group to a static compressive load applied axially to the pile or piles within the group. This test method is applicable to all deep foundation units that function in a manner similar to piles regardless of their method of installation. This test method is divided into the following sections:

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1.2 The values stated in inch-pound units are to be regarded as the standard.

NOTE 1—Apparatus and procedures designated “optional” are to be required only when included in the project specifications or if not specified, may be used only with the approval of the engineer responsible for the foundation design. The word “shall” indicates a mandatory provision and “should” indicates a recommended or advisory provision. Imperative sentences indicate mandatory provisions. Notes, illustrations, and appendices included herein are explanatory or advisory.

NOTE 2—This test method does not include the interpretation of test results or the application of test results to foundation design. See Appendix X1 for comments regarding some of the factors influencing the interpretation of test results. A qualified geotechnical engineer should

interpret the test results for predicting pile performance and capacity. The term “failure” as used in this method indicates rapid progressive settlement of the pile or pile group under a constant load.

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:

D 3689 Method of Testing Individual Piles Under Static Axial Tensile Load²

2.2 *American National Standards Institute Standard:*
B30.1 Safety Code for Jacks³

3. Apparatus for Applying Loads

3.1 General:

3.1.1 The apparatus for applying compressive loads to the test pile or pile group shall be as described in 3.3, 3.4, or 3.5 or as otherwise specified and shall be constructed so that the loads are applied to the central longitudinal axis of the pile or pile group to minimize eccentric loading. Paragraph 3.3 is suitable for applying axial loads to individual vertical or batter piles; 3.4 and 3.5 are suitable for applying vertical loads only.

NOTE 3—When a pile group is subject to vertical test loads, cap rotations and horizontal displacements could occur. The occurrence of such movements and the necessary reactions to resist such movements if they are prohibited should be considered when designing and constructing the loading apparatus for the group test.

NOTE 4—If it is not feasible to apply axial test loads to a batter pile, the results of a test on a similar nearby vertical pile generally may be used to

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² *Annual Book of ASTM Standards*, Vol 04.08.

³ Available from American National Standards Institute, 1430 Broadway, New York, NY 10018.

