



Designation: D8232 – 18

Standard Test Procedures for Measuring the Inclination of Deep Foundations¹

This standard is issued under the fixed designation D8232; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 The test procedures described in this standard measure the inclination of deep foundation elements, including elements in the excavation stage. These Procedures apply to all deep foundations, referred to herein as “piles,” regardless of their method of installation.

1.2 This standard provides minimum requirements for measuring the inclination of deep foundations. Plans, specifications, and/or provisions prepared by a qualified engineer may provide additional requirements and procedures as needed to satisfy the objectives of a particular test program.

1.3 This standard provides the following test Procedures:

Procedure A (Inclinometer Testing)— for testing both open boreholes and constructed piles	9.1
Procedure B (Pendulum Testing)—for testing open boreholes	9.2

1.4 Apparati and procedures herein designated “optional” may produce different test results and may be used only when approved by a qualified engineer (hereafter “the Engineer”). The word “shall” indicates a mandatory provision, and the word “should” indicates a recommended or advisory provision. Imperative sentences indicate mandatory provisions.

1.5 The Engineer shall design and approve the test configuration and test procedures.

1.6 The text of this standard references notes and footnotes that provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard. This standard also includes illustrations and appendices intended only for explanatory or advisory use.

1.7 *Units*—The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard. Reporting of test results in units other than SI shall not be regarded as nonconformance with this standard.

1.8 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice D6026.

¹ This test method is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.11 on Deep Foundations. Current edition approved Dec. 1, 2018. Published December 2018. DOI: 10.1520/D8232-18.

1.9 The procedures used to specify how data are collected, recorded and calculated in this standard are regarded as the industry standard. In addition, they are representative of the significant digits that should generally be retained. The procedures used do not consider material variation, purpose for obtaining the data, special purpose studies, or any considerations for the user’s objectives; and it is common practice to increase or reduce significant digits of reported data to be commensurate with these considerations. It is beyond the scope of this standard to consider significant digits used in analysis methods for engineering design.

1.10 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.11 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:

- D653 Terminology Relating to Soil, Rock, and Contained Fluids
- D3740 Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
- D6026 Practice for Using Significant Digits in Geotechnical Data
- D6760 Test Method for Integrity Testing of Concrete Deep Foundations by Ultrasonic Crosshole Testing

3. Terminology

3.1 Definitions:

3.1.1 For definitions of common technical terms used in this standard, refer to Terminology D653.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *battered pile or raked pile, n*—a pile purposely constructed at an inclination.