



Designation: D7015/D7015M – 18

Standard Practices for Obtaining Intact Block (Cubical and Cylindrical) Samples of Soils¹

This standard is issued under the fixed designation D7015/D7015M; 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.

1. Scope*

1.1 These practices outline the procedures for obtaining intact block (cubical and cylindrical) soil samples.

1.2 Intact block samples are obtained for laboratory tests to determine the strength, consolidation, permeability, and other geotechnical engineering or physical properties of the intact soil.

1.3 Two sampling practices are presented. Practice A covers cubical block sampling, while Practice B covers cylindrical block sampling.

1.4 These practices usually involve test pit excavation and are limited to relatively shallow depths. Except in the case of large diameter (that is, diameters greater than 0.8 m [2.5 ft]) bored shafts of circular cross-section in unsaturated soils, for depths greater than about 1 to 1½ meters [3 to 5 ft] or depths below the water table, the cost and difficulties of excavating, cribbing, and dewatering generally make block sampling impractical and uneconomical. For these conditions, use of a thin-walled push tube soil sampler (Practice D1587/D1587M), a piston-type soil sampler (Practice D6519), or Hollow-Stem Auger (Practice D6151/D6151M), Dennison, or Pitcher-type soil core samplers, or freezing the soil and coring may be required.

1.5 These practices do not address environmental sampling; consult Guides D6169/D6169M and D6232 for information on sampling for environmental investigations.

1.6 Successful sampling of granular materials requires sufficient cohesion, cementation, or apparent cohesion (due to moisture tension (suction)) of the soil for it to be isolated in a column shape without undergoing excessive deformations. Additionally, care must be exercised in the excavation, preservation and transportation of intact samples (see Practice D4220/D4220M, Group D).

1.7 The values stated in either SI units or inch-pound units [given in brackets] are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the 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 unless superseded by this standard.

1.8.1 The procedures used to specify how data are collected/recorded or calculated in this standard are regarded as the industry standard. In addition they are representative of the significant digits that generally should 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; 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 analytical methods for engineering design.

1.9 *These practices offer a set of instructions for performing one or more specific operations. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of these practices may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this document means only that the document has been approved through the ASTM consensus process.*

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. For specific hazard statements, see Section 6.*

¹ These practices are under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.02 on Sampling and Related Field Testing for Soil Evaluations.

Current edition approved Dec. 1, 2018. Published December 2018. Originally approved in 2004. Last previous edition approved in 2013 as D7015 – 13. DOI: 10.1520/D7015_D7015M-18.

*A Summary of Changes section appears at the end of this standard