



Standard Practice for Thin-Walled Tube Sampling of Fine-Grained Soils for Geotechnical Purposes¹

This standard is issued under the fixed designation D1587/D1587M; 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.

1. Scope

1.1 This practice covers a procedure for using a thin-walled metal tube to recover intact soil samples suitable for laboratory tests of engineering properties, such as strength, compressibility, permeability, and density. This practice provides guidance on proper sampling equipment, procedures, and sample quality evaluation that are used to obtain intact samples suitable for laboratory testing.

1.2 This practice is limited to fine-grained soils that can be penetrated by the thin-walled tube. This sampling method is not recommended for sampling soils containing coarse sand, gravel, or larger size soil particles, cemented, or very hard soils. Other soil samplers may be used for sampling these soil types. Such samplers include driven split barrel samplers and soil coring devices (Test Methods [D1586](#), [D3550](#), and Practice [D6151](#)). For information on appropriate use of other soil samplers refer to Practice [D6169](#).

1.3 This practice is often used in conjunction with rotary drilling (Practice [D1452](#) and Guides [D5783](#) and [D6286](#)) or hollow-stem augers (Practice [D6151](#)). Subsurface geotechnical explorations should be reported in accordance with Practice [D5434](#). This practice discusses some aspects of sample preservation after the sampling event. For more information on preservation and transportation process of soil samples, consult Practice [D4220](#).

1.4 This practice may not address special considerations for environmental or marine sampling; consult Practices [D6169](#) and [D3213](#) for information on sampling for environmental and marine explorations.

1.5 Thin-walled tubes meeting requirements of [6.3](#) can also be used in piston samplers, or inner liners of double tube push or rotary-type soil core samplers (Pitcher barrel, Practice [D6169](#)). Piston samplers in Practice [D6519](#) use thin-walled tubes.

1.6 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice [D6026](#), unless superseded by this standard.

1.7 This practice offers 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 this practice 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.

1.8 The values stated in either inch-pound units or SI units presented 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 non-conformance with the standard.

1.9 *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

- [A513/A513M Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing](#)
- [A519 Specification for Seamless Carbon and Alloy Steel Mechanical Tubing](#)
- [A787 Specification for Electric-Resistance-Welded Metallic-Coated Carbon Steel Mechanical Tubing](#)
- [B733 Specification for Autocatalytic \(Electroless\) Nickel-Phosphorus Coatings on Metal](#)

¹ This practice is 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 Nov. 15, 2015. Published December 2015. Originally approved in 1958. Last previous edition approved in 2012 as D1587 – 08 (2012) ^{ϵ 1}. DOI: 10.1520/D1587_D1587M-15.

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.