



Designation: D6519/D6519M – 23

Standard Practice for Sampling of Soil Using the Hydraulically Operated Stationary Piston Sampler¹

This standard is issued under the fixed designation D6519/D6519M; 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 This practice covers a procedure for sampling of cohesive, organic, or fine-grained soils, or combination thereof, using a thin-walled metal tube that is inserted into the soil formation by means of a hydraulically operated piston. It is used to collect relatively intact soil samples suitable for laboratory tests to determine structural and chemical properties for geotechnical and environmental site characterizations.

1.1.1 Guidance on preservation and transport of samples in accordance with Practice D4220/D4220M may apply. Samples for classification may be preserved using procedures similar to Class A. In most cases, a thin-walled tube sample can be considered as Class B, C, or D. Refer to Guide D6169/D6169M for use of the hydraulically operated stationary piston soil sampler for environmental site characterization. This sampling method is often used in conjunction with rotary drilling methods such as fluid rotary; Guide D5783; and hollow stem augers, Practice D6151/D6151M. Sampling data shall be reported in the field log in accordance with Guide D5434.

1.2 The hydraulically operated stationary piston sampler is limited to soils and unconsolidated materials that can be penetrated with the available hydraulic pressure that can be applied without exceeding the structural strength of the thin-walled tube. This standard addresses typical hydraulic piston samplers used on land or shallow water in drill holes. The standard does not address specialized offshore samplers for deep marine applications that may or may not be hydraulically operated. This standard does not address operation of other types of mechanically advanced piston samplers. For information on other soil samplers, refer to Guide D6169/D6169M.

1.3 *Units*—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. Reporting of results in units other than shall not be regarded as nonconformance with this standard.

1.4 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice D6026, unless superseded by this standard.

1.5 *This practice does not purport to address all the safety concerns, if any, associated with its use and may involve use of hazardous materials, equipment, and operations. It is the responsibility of the user of this practice to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use. Also, the user must comply with prevalent regulatory codes, such as OSHA (Occupational Health and Safety Administration) guidelines, while using this practice. For good safety practice, consult applicable OSHA regulations and other safety guides on drilling.*²

1.6 *This practice offers a set of instructions for performing one or more specific operations. This practice cannot replace education or experience and should be used in conjunction with professional judgement. Not all aspects of this practice may be applicable in all circumstances. This practice 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 means only that the document has been approved through the ASTM consensus process. This practice does not purport to comprehensively address all of the methods and potential issues associated with sampling of soil. Users should seek qualified professionals for decisions as to the proper equipment and methods that would be most successful for their site exploration. Other methods may be available for drilling and sampling of soil, and qualified professionals should have flexibility to exercise judgment as to possible alternatives not covered in this practice. The practice is current at the time of issue, but new alternative methods may become available prior to revisions, therefore, users should consult with manufacturers or producers prior to specifying program requirements.*

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. 1, 2023. Published November 2023. Originally approved in 2000. Last previous edition approved in 2015 as D6519 – 15. DOI: 10.1520/D6519_D6519M-23.

² *Drilling Safety Guide*, National Drilling Assn., 3008 Millwood Ave., Columbia, SC 29205.

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