



Standard Practice for Collection and Handling of Soils Obtained in Core Barrel Samplers for Environmental Investigations¹

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1. Scope

1.1 This practice covers procedures for obtaining soils from core barrel samplers for chemical and physical analysis, with an emphasis on the collection and handling procedures that maintain the representativeness of the chemical contaminants of concern. Core barrel samplers are initially empty (hollow) until they are pushed into the ground to collect and retrieve a cylindrical soil sample with minimal disturbance. The selection of equipment and the sample handling procedures are dependent on the soil properties, the depth of sampling, and the general properties of the chemical contaminants of concern, that is, volatile organic compounds, semi-volatile organic compounds, and inorganic constituents. The sampling procedures described are designed to maintain representative concentrations of the contaminants regardless of their physical state(s), that is, solid, liquid or gas.

1.2 Four general types of core barrel samplers are discussed in this practice: split-barrel, ring-lined barrel, thin-walled tube, and solid-barrel samplers.

1.3 This document does not cover all the core barrel devices that are available for the collection of soil samples.

1.4 The procedures described may or may not be applicable to handling of samples for assessing certain geotechnical properties, for example, soil porosity.

NOTE 1—Prior to commencement of any intrusive exploration, the site should be checked for underground utilities.

1.5 *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.*

¹ This practice is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.01.03 on Sampling Equipment.

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2. Referenced Documents

2.1 ASTM Standards:²

- D653 Terminology Relating to Soil, Rock, and Contained Fluids
- D1586 Test Method for Penetration Test (SPT) and Split-Barrel Sampling of Soils
- D1587 Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes
- D3550 Practice for Thick Wall, Ring-Lined, Split Barrel, Drive Sampling of Soils
- D3694 Practices for Preparation of Sample Containers and for Preservation of Organic Constituents
- D4547 Guide for Sampling Waste and Soils for Volatile Organic Compounds
- D4687 Guide for General Planning of Waste Sampling
- D4700 Guide for Soil Sampling from the Vadose Zone
- D5088 Practice for Decontamination of Field Equipment Used at Waste Sites
- D5784 Guide for Use of Hollow-Stem Augers for Geoenvironmental Exploration and the Installation of Subsurface Water-Quality Monitoring Devices
- D5792 Practice for Generation of Environmental Data Related to Waste Management Activities: Development of Data Quality Objectives
- D5875 Guide for Use of Cable-Tool Drilling and Sampling Methods for Geoenvironmental Exploration and Installation of Subsurface Water-Quality Monitoring Devices
- D5876 Guide for Use of Direct Rotary Wireline Casing Advancement Drilling Methods for Geoenvironmental Exploration and Installation of Subsurface Water-Quality Monitoring Devices
- D6051 Guide for Composite Sampling and Field Subsampling for Environmental Waste Management Activities
- D6151 Practice for Using Hollow-Stem Augers for Geotechnical Exploration and Soil Sampling

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.