



Designation: D420 – 18

Standard Guide for Site Characterization for Engineering Design and Construction Purposes¹

This standard is issued under the fixed designation D420; 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.

INTRODUCTION

Site characterization for engineering design and construction purposes involves both simple and complex techniques that may be accomplished by many different procedures and may be variously interpreted. These studies are frequently site specific and are influenced by geological and geographical settings, by the purpose of the site characterization, by design requirements for the project proposed, and by the background, training, and experience of the staff involved.

This document is a guide to the selection of the various ASTM standards that are available for the exploration of soil, rock, and groundwater for projects that involve surface and/or subsurface construction, or both. It is intended to improve consistency of practice and to encourage rational planning of a site characterization program. Since the subsurface conditions at a particular site are usually the result of a combination of natural, geologic, topographic, and climatic factors, and of historical modifications both natural and manmade, an adequate and internally consistent exploration program will allow evaluation of the results of these influences.

1. Scope*

1.1 This guide refers to ASTM methods to perform site characterization for engineering, design, and construction purposes. The objective of the site characterization should be to identify and locate, both horizontally and vertically, significant soil and rock types and groundwater conditions present within a given site area and to establish the characteristics of the subsurface materials by sampling or in situ testing, or both.

1.2 Laboratory testing of soil, rock, and groundwater samples is specified by other ASTM standards not listed herein. Subsurface exploration for environmental purposes is also outside the scope of this guide.

1.3 Prior to commencement of the site characterization the site should be checked for potentially hazardous or otherwise contaminated materials or cultural/archeological conditions. If evidence of unknown potentially hazardous or otherwise contaminated materials or conditions are encountered in the course of the site characterization, work shall be interrupted until the circumstances have been evaluated and revised instructions issued.

¹ This guide is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.01 on Surface and Subsurface Characterization.

Current edition approved Feb. 1, 2018. Published March 2018. Originally published as D420 – 65T. Last previous edition approved in 2003 as D420 – 93(2003), which was withdrawn January 2012 and reinstated February 2018. DOI: 10.1520/D0420_D0420M-18.

1.3.1 In addition the location and nature of underground and overhead utilities should be identified to ensure that there is no impact to the proposed site characterization. Impacts may include but are not limited to interference with geophysical methods, damaging utilities, creating an unsafe work condition, and limiting accessibility for exploratory equipment.

1.4 The values stated in either SI units or inch-pound units are to be regarded as the 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. Inch-pound units are provided in brackets for convenience.

1.5 *This guide offers an organized collection of information or a series of options and does not recommend a specific course of action. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this guide 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.*

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the*

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