



Designation: D8512 – 23

Standard Practice for Preliminary Karst Terrain Assessment for Site Development¹

This standard is issued under the fixed designation D8512; 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 This practice defines and summarizes various procedures for assessing specific sites for potential adverse impacts that karst conditions might have on site development including proposed construction or site management and impacts to the resource. Resources impacted may include water quality, water supply, cave, or aquifer fauna, and/or cultural or scientific resources. Karst impacts to site development include collapse and subsidence, differential subgrade conditions (for example, shallow bedrock, voids, soft soils, etc.), non-uniform bearing, excavation difficulty, and dewatering. The goal is to identify the relevant conditions for consideration in site selection and design. It is intended to offer various courses of actions that will provide a rational framework for planning and implementing a site characterization program to define potential karst conditions that might impact or be impacted by site development consideration for site suitability assessment. It is of note that the site assessment can use any combination of the included procedures

1.2 Since the site is in mapped or identified karst terrain, final ranking of a site will fit in one of the following categories:

- (1) There could be minimal karst influence (except subsurface influence) on site use and development;
- (2) It is likely that karst will influence or there is future potential that karst will influence site development;
- (3) Karst will play a significant role on future planning and development at the site.

1.3 Objectives guiding the development of this practice are:

- (1) to synthesize and put in writing customary practice for *preliminary karst assessments*,
- (2) to facilitate high quality, standardized *preliminary karst assessments*, and
- (3) to clarify an industry standard practice for *preliminary karst assessments* to provide a protocol for these assessments to assist design professionals, plan reviewers, public works officials, and jurisdictional regulators in making an informed judgment on site development and management.

¹ This test method is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.27 on Karst.

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1.4 The use of this practice is limited to the scope as set forth in this section. However, the report might be of interest and useful in endeavors that the site characterization and report do not address. It is beyond the scope of this practice to include recommendations to any facet of the project design or construction processes. Any portion of the scope of this practice should be considered carefully if it is found in conflict with local ordinances or regulations. Such a condition may require a formal variance from the issuing agency.

1.5 This practice 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 practice may be applicable in all circumstances. This ASTM 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 of this document means only that the document has been approved through the ASTM consensus process.

1.6 Personnel not having specialized training or experience in karst survey and assessment methods should solicit assistance from qualified professionals. All references in this standard to the "qualified professional" refers to individuals (such as engineers, soil scientists, geophysicists, geologists including engineering geologists or hydrogeologists), who have the appropriate experience and, if required by local regulations, applicable certification, licensure or registration. The term "engineering" must be understood to be associated with the practices or activities of that qualified professional.

1.7 *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.*

1.8 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*