



Designation: D8249 – 19

Standard Practice for Use of Rotary Kiln Produced Porous Ceramic as a Mineral Amendment in Topsoil Used for Landscaping and Related Purposes¹

This standard is issued under the fixed designation D8249; 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 covers the material characteristics, physical requirements, and sampling appropriate for the designation of the rotary kiln produced porous ceramic material as a mineral amendment. The porous ceramic material can be used to replace the sand content of a topsoil or it can be blended into an existing topsoil. Typically 5-20 % by mass of porous ceramics are used when blending with or adding to a topsoil.

1.2 The potential/success of a topsoil amendment is measured/determined by its ability to provide or enhance some or all of the desired properties/characteristics of the topsoil that may be deficient in the unamended topsoil.

1.3 Soils typically consist of three components: water, air and solids. Solids can be further divided into two sub-components: organic matter, such as peat, muck or other decayed matter, and inorganic mineral matter, such as clay, silt and sand. Porous ceramic falls into the inorganic mineral matter sub-component and is generally used in horticultural topsoil applications as a substitute/alternative or addition for the sand component of soil. See Specification [D5268](#), Table 1.

1.4 *Units*—The values stated in SI units are to be regarded as the standard. The values given in parentheses are provided for information only and are not considered standard. Reporting of test results in units other than SI shall not be regarded as nonconformance with this standard.

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values shall conform to the guidelines for significant digits and rounding established in Practice [D6026](#), unless superseded by this test method.

1.5.1 The procedures used to specify how data are collected/recorded and calculated in the standard are regarded as the industry standard. In addition, they are representative of the significant digits that generally should be retained. The procedures used do not consider material variation, purpose for obtaining the data, special purpose studies, or any consider-

ations for the user's objectives; and it is common practice to increase or reduce significant digits of reported data to be commensurate with these considerations. It is beyond the scope of these test methods to consider significant digits used in analysis methods for engineering data.

1.6 *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.*

1.7 *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.*

2. Referenced Documents

- 2.1 *ASTM Standards*:²
- [C29/C29M Test Method for Bulk Density \("Unit Weight"\) and Voids in Aggregate](#)
 - [C566 Test Method for Total Evaporable Moisture Content of Aggregate by Drying](#)
 - [D75/D75M Practice for Sampling Aggregates](#)

¹ This test method is under the jurisdiction of ASTM Committee [D18](#) on Soil and Rock and is the direct responsibility of Subcommittee [D18.22](#) on Media for Plant Growth.

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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.