



Standard Guide for Use of Rotary Kiln Produced Expanded Shale, Clay or Slate (ESCS) as a Mineral Amendment in Topsoil Used for Landscaping and Related Purposes¹

This standard is issued under the fixed designation D 5883; 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.

^{ε1} NOTE—Paragraph 1.5 was added editorially October 1998.

1. Scope

1.1 This guide covers the material characteristics, physical requirements, and sampling appropriate for the designation of the material as a mineral amendment.

1.2 The presence in the topsoil of the correct nutrient and pH level is necessary for healthy plant growth. This guide does not, however, cover a determination of the nutrients, nor their availability.²

NOTE 1—The nutrient content of topsoil is important and the chemicals usually evaluated are nitrogen, phosphate, and potassium. Nutrient deficiencies may be corrected by using fertilizers. Excess soluble salts should be examined as to their desirability. The acidity or alkalinity of the soil is also important. Excess acidity may be corrected by the application of lime dust. Excess alkalinity may be corrected by the application of sulfur or other suitable acidifying compounds. The latter item, in addition to lowering pH, also could be considered as an aggregate when considering the particle size distribution.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 *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.*

1.5 *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.

2. Referenced Documents

2.1 ASTM Standards:

C 29/C 29M Test Method for Unit Weight and Voids in Aggregate³

C 566 Test Method for Total Moisture Content of Aggregate by Drying³

D 75 Practice for Sampling Aggregates⁴

D 653 Terminology Relating to Soil, Rock, and Contained Fluids⁵

D 1140 Test Method for Amount of Material in Soils Finer than No. 200 (75 μ m) Sieve⁵

D 4972 Test Method for pH of Soils⁶

D 5268 Specification for Topsoil Used for Landscaping Purposes⁶

E 11 Specification for Wire-Cloth Sieves for Testing Purposes⁷

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, refer to Terminology D 653.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *amendment, physical*—any substance, such as sand, calcined clay, peat, or sawdust, added to the soil to alter its physical properties.

3.2.2 *slit trench drain*—a narrow trench (usually 5 to 10 centimeters wide) back-filled to the surface with a material, such as sand, gravel, or crushed rock, to facilitate surface or substance drainage.

3.2.3 *soil amendment (physical), n*—any substance, such as sand, calcined clay, shale or slate, peat or sandust, added to the

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² Nutrient testing procedures are found in the state Agricultural Experiment Station recommendations from the state within which the landscape is located, "Methods of Soil Analysis" Editor-in-Chief: C. A. Black, *Agronomy No. 9*, Vol 2, American Society of Agronomy, Inc., Madison, WI, and Hesse, P.R., *A Textbook of Soil Chemical Analysis*, Chemical Publishing Co., New York, NY 1972.

³ *Annual Book of ASTM Standards*, Vol 04.02.

⁴ *Annual Book of ASTM Standards*, Vol 04.07.

⁵ *Annual Book of ASTM Standards*, Vol 04.08.

⁶ *Annual Book of ASTM Standards*, Vol 04.09.

⁷ *Annual Book of ASTM Standards*, Vol 14.02.