



Standard Practice for Use of Inorganic Process Wastes as Structural Fill¹

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1. Scope

1.1 This practice provides guidance for use of selected process wastes as structural fills by listing representative test methods for predicting and evaluating those physical characteristics of waste that are related to the integrity of fills and to protection of ground and surface waters.

1.2 Table 1 lists references which provide engineering practices and test procedures that may be applied to process waste for use as structural fill.

1.3 Some process wastes may produce leachate that exceeds environmentally acceptable limits. Special provisions are included to accommodate this class of materials (see 7.2).

2. Referenced Documents

2.1 ASTM Standards:

C 294 Descriptive Nomenclature for Constituents of Natural Mineral Aggregate²

C 295 Guide for Petrographic Examination of Aggregates for Concrete²

C 593 Specification for Fly Ash and Other Pozzolans for Use with Lime³

C 821 Specification for Lime for Use with Pozzolans³

D 420 Guide to Site Characterization for Engineering, Design, and Construction Purposes⁴

D 421 Practice for Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants⁴

D 422 Test Method for Particle-Size Analysis of Soils⁴

D 4318 Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils⁴

D 559 Test Methods for Wetting and Drying Compacted Soil-Cement Mixtures⁴

D 560 Test Methods for Freezing and Thawing Compacted Soil-Cement Mixtures⁴

D 653 Terminology Relating to Soil, Rock, and Contained Fluids⁴

D 698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³))⁴

D 854 Test Method for Specific Gravity of Soils⁴

D 1140 Test Method for Amount of Material in Soils Finer Than the No. 200 (75- μ m) Sieve⁴

D 1452 Practice for Soil Investigation and Sampling by Auger Borings⁴

D 1556 Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method⁴

D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))⁴

D 1586 Test Method for Penetration Test and Split-Barrel Sampling of Soils⁴

D 1587 Practice for Thin-Walled Tube Sampling of Soils⁴

D 1633 Test Method for Compressive Strength of Molded Soil-Cement Cylinders⁴

D 2049 Test Method for Relative Density of Cohesionless Soils⁵

D 2166 Test Method for Unconfined Compressive Strength of Cohesive Soil⁴

D 2167 Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method⁴

D 2216 Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock⁴

D 2217 Practice for Wet Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants⁴

D 2434 Test Method for Permeability of Granular Soils (Constant Head)⁴

D 2487 Classification of Soils for Engineering Purposes (Unified Soil Classification System)⁴

D 2488 Practice for Description and Identification of Soils (Visual-Manual Procedure)⁴

D 2573 Test Method for Field Vane Shear Test in Cohesive Soil⁴

¹ This practice is under the jurisdiction of ASTM Committee D-34 on Waste Management and is the direct responsibility of Subcommittee D34.06 on Recovery and Reuse.

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² *Annual Book of ASTM Standards*, Vol 04.02.

³ *Annual Book of ASTM Standards*, Vol 04.01.

⁴ *Annual Book of ASTM Standards*, Vol 04.08.

⁵ Discontinued—See 1983 *Annual Book of ASTM Standards*, Vol 04.08. Replaced by D4253.