



Standard Guide for Selection of Methods for Estimating Soil Loss by Erosion¹

This standard is issued under the fixed designation D 6629; 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 guide describes methods used for estimating soil losses due to rill and interrill erosion. All known methods for water erosion with a sediment yield component are listed. This guide provides complete reference citations for the various methods currently used to estimate soil loss by rill and interrill erosion. The referenced methods contain the rationale and detailed procedures for determining rill and interrill soil loss. For each method listed, specific applicability, limitations, and level of complexity are briefly outlined in terms of the relative spatial scale, land use, hydrology, erosion, time scale, input requirements, and output.

1.2 The referenced methods were developed for specific uses and may not be applicable in all cases. For example, some of the values derived by these methods estimate the amount of soil movement on a field without re-deposition while others account for re-deposition and estimate off-field sediment yield. Most of these methods are not intended to predict sediment yield.

1.3 *Metric (SI) Units.* Some of the methods in this guide are written in the preferred English units. A discussion of the conversion of the final answer to metric units is included in paragraph 6.2.

1.4 *This guide offers an organized collection of information or a series of options and does not recommend a specific course of action. This guide cannot replace education or experience and should be used in conjunction with professional judgement. Not all aspects of this guide may be applicable in all circumstances. This guide 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 guide be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this guide has been approved through the ASTM consensus process.*

1.5 *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 requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 653 Terminology Relating to Soil, Rock, and Contained Fluids²

E 380 Practice for Use of the International System of Units (SI)³

3. Terminology

3.1 While most of the terms used in this guide conform to Terminology D 653, some are unique to this guide. These terms relate to soil erosion and are used frequently in the methods outlined in this guide.

NOTE 1—The Natural Resources Conservation Service was formerly the Soil Conservation Service.

3.2 Definitions:

3.2.1 *agronomy*—the science of field crop production and soil management.

3.2.2 *denudation*—the sum of the processes that result in the wearing away or the progressive lowering of the earth's surface by weathering, mass wasting, or transportation; also the combined destructive effects of such processes.

3.2.3 *erodibility*—the degree to which a soil is susceptible to erode. Some soils erode more readily than others due to the soil properties.

3.2.4 *erosion*—the wearing away of soil and rock by weathering, mass wasting, and the action of streams, glaciers, waves, wind, and underground water.

3.2.5 *fallow*—allowing cropland to lie idle, either tilled or untilled, during the whole or greater portion of the growing season.

3.2.6 *fertility (soil)*—the quality of a soil that enables it to provide nutrients in adequate amounts and in proper balance for the growth of specified plants when other growth factors, such as light, moisture, temperature, and the physical condition of the soil are favorable.

3.2.7 *mulch*—a natural or artificial layer of suitable materials that aid in soil stabilization and soil moisture conservation, thus providing micro-climatic conditions suitable for germination and growth.

3.2.8 *pasture*—an area devoted to the production of forage, introduced or native, and harvested by grazing.

¹ This guide is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.22 on Soil as a Medium for Plant Growth.

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² *Annual Book of ASTM Standards*, Vol 04.08.

³ Discontinued 1997; see 1996 *Annual Book of ASTM Standards*, Vol 04.09. Replaced by IEEE/ASTM SI-10.