



Designation: D3551 – 17

# Standard Practice for Laboratory Preparation of Soil-Lime Mixtures Using Mechanical Mixer<sup>1</sup>

This standard is issued under the fixed designation D3551; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the U.S. Department of Defense.*

## 1. Scope\*

1.1 This practice covers the laboratory preparation of soil-lime mixtures for use in determining the effects of lime on soil properties (plasticity, strength, moisture-density relations, etc.) and the design of mixtures for construction.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.3 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice [D6026](#).

1.3.1 The procedures used to specify how data are collected/recorded or calculated in this 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 considerations 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 this standard to consider significant digits used in analysis methods for engineering design.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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 judgement. 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 the ASTM consensus process.*

1.6 *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:<sup>2</sup>

[D653 Terminology Relating to Soil, Rock, and Contained Fluids](#)

[D2216 Test Methods for Laboratory Determination of Water \(Moisture\) Content of Soil and Rock by Mass](#)

[D3740 Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction](#)

[D6026 Practice for Using Significant Digits in Geotechnical Data](#)

## 3. Terminology

### 3.1 Definitions:

3.1.1 For definitions of common technical terms used in this practice, refer to Terminology [D653](#).

## 4. Significance and Use

4.1 This practice standardizes the preparation of soil-lime mixtures for laboratory testing by engineers and researchers interested in determining properties of soil when stabilized with lime. In this method, the mellowing period is mentioned, but no specific recommendations are made because the mellowing period to be used in testing depends upon each specific use.

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee [D18](#) on Soil and Rock and is the direct responsibility of Subcommittee [D18.15](#) on Stabilization With Admixtures.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

\*A Summary of Changes section appears at the end of this standard