



## Construction Materials Testing – Soils

### Level IV Selected General References

Candidates are permitted to bring only the following references into the test center.

<u>Title</u>	<u>Edition*</u>
ASTM Section 4 Construction Volume 04.02 Concrete and Aggregates	2016
1ASTM C40/C40M: Standard Test Method for Organic Impurities in Fine Aggregates for Concrete	2011
2ASTM C127: Standard Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate	2015
3ASTM C136/C136M: Standard Test Method for Sieve Analysis of Fine and Coarse Aggregate	2014
4ASTM E329: Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection	2014a
ASTM Section 4 Construction Volume 04.03 Road and Paving Materials; Vehicle-Pavement Systems	2016
5ASTM D3665: Standard Practice for Random Sampling of Construction Materials	2012
ASTM Section 4 Construction Volume 04.08 Soils and Rock (I)	2016
6ASTM D558: Standard Test Methods for Moisture-Density (Unit Weight) Relations of Soil-Cement Mixtures	2011
7ASTM D559: Standard Test Methods for Wetting and Drying Compacted Soil-Cement Mixtures	2015
8ASTM D560: Standard Test Methods for Freezing and Thawing Compacted Soil-Cement Mixtures	2015
9ASTM D653: Standard Terminology Relating to Soil, Rock, and Contained Fluids	2014
10ASTM D698: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft <sup>3</sup> (600 kN-m/m <sup>3</sup> ))	2012e2
11ASTM D806: Standard Test Method for Cement Content of Hardened Soil-Cement Mixtures	2011
12ASTM D854: Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer	2014
13ASTM D1143/D1143M: Standard Test Methods for Deep Foundations Under Static Axial Compressive Load	2007(2013)
14ASTM D1556/D1556M: Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method	2015e1
15ASTM D1557: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft <sup>3</sup> (2,700 kN-m/m <sup>3</sup> ))	2012e1
16ASTM D1883: Standard Test Method for California Bearing Ratio (CBR) of Laboratory-Compacted Soils	2014
17ASTM D2113: Standard Practice for Rock Core Drilling and Sampling of Rock for Site Exploration	2014
18ASTM D2166/D2166M: Standard Test Method for Unconfined Compressive Strength of Cohesive Soil	2013
19ASTM D2167: Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method	2015
20ASTM D2487: Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)	2011
21ASTM D2488: Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)	2009a



22ASTM D2937: Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method	2010
23ASTM D3080/D3080M: Standard Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions	2011
24ASTM D3155: Standard Test Method for Lime Content of Uncured Soil-Lime Mixtures	2011
25ASTM D3740: Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction	2012a
26ASTM D3966/D3966M: Standard Test Methods for Deep Foundations Under Lateral Load	2007(2013)e1
27ASTM D4220/D4220M: Standard Practices for Preserving and Transporting Soil Samples	2014
28ASTM D4318: Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils	2010e1
29ASTM D4972: Standard Test Method for pH of Soils	2013
30ASTM D5080: Standard Test Method for Rapid Determination of Percent Compaction	2008
31ASTM D5434: Standard Guide for Field Logging of Subsurface Explorations of Soil and Rock	2012
ASTM Section 4 Construction Volume 04.09 Soils and Rock (II)	2016
32ASTM D6938: Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)	2015
33ASTM D7380: Standard Test Method for Soil Compaction Determination at Shallow Depths Using 5-lb (2.3 kg) Dynamic Cone Penetrometer	2015

**\* The test questions are based on the standard editions listed above; therefore, candidates are strongly urged to bring these editions to the exam. Note: Test questions are based on the standard editions listed above; therefore, candidates are strongly urged to bring these published year editions to the exam. Note: candidates may bring older or newer editions—instead of the editions listed above—at their own risk. Exam comments that are made based on other published edition years, will not be reviewed until the next maintenance cycle. Candidates are responsible for reviewing the content outline and bringing in allowable printed references that are applicable to what is being tested. Acceptable references may be copied in whole or part.**

Note: References must be bound or secured in a three-ring binder with a title page (example provided on the main program page). They may have highlighted text and self-adhesive index tabs or dividers, however they must be permanently attached. No other additions or modifications to the references are allowed. Handwritten notes are NOT permitted. References with loose paper or pages and freestanding tabs (e.g., repositionable sticky notes/tabs of any kind) are not permitted into the testing centers.

---

During the exam, the following titles will be available to candidates **on-screen only**:

<u>Title</u>	<u>Edition*</u>
34AASHTO M 145: Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes	1995
35AASHTO R 18: Standard Recommended Practice for Establishing and Implementing a Quality System for Construction Materials Testing Laboratories	2016

\*Test questions are based on the editions listed above. These editions will be available to candidates during the exam in PDF format.



In addition to the references listed above, the following publications can provide some of the job knowledge required by a construction materials testing technician. While these books may help prepare for the exam, they are NOT permitted in the test center.

<sup>36</sup>ASTM G57 (2012): Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method, American Society for Testing and Materials (ASTM)

<sup>37</sup>ASTM G187 (2012): Standard Test Method for Measurement of Soil Resistivity Using the Two-Electrode Soil Box Method, American Society for Testing and Materials (ASTM)

<sup>38</sup>Geotechnical Testing, Observation, and Documentation. (2008), Tim Davis, American Society of Civil Engineers (ASCE)

- 
- This listing is not intended to be complete or representative.

February 5, 2022

[footnote number is linked to a task on the Content Outline](#)