



## Construction Materials Testing – Soils

### Level II 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 C136/C136M: Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates	2014
2ASTM C294: Standard Descriptive Nomenclature for Constituents of Concrete Aggregates	2012
ASTM Section 4 Construction Volume 04.03 Road and Paving Materials; Vehicle-Pavement Systems	2016
3ASTM D75/D75M: Standard Practice for Sampling Aggregates	2014
4ASTM D2419: Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate	2014
23ASTM D3665: Standard Practice for Random Sampling of Construction Materials	2012
ASTM Section 4 Construction Volume 04.08 Soil and Rock (I): D420-D5876	2016
5ASTM D558: Standard Test Methods for Moisture-Density (Unit Weight) Relations of Soil-Cement Mixtures	2011
6ASTM D559/D559M: Standard Test Methods for Wetting and Drying Compacted Soil-Cement Mixtures	2015
7ASTM D653: Standard Terminology Relating to Soil, Rock, and Contained Fluids	2014
8ASTMD698: 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
9ASTM D806: Standard Test Method for Cement Content of Hardened Soil-Cement Mixtures	2011
10ASTM D854: Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer	2014
11ASTM D1140: Standard Test Methods for Determining the Amount of Material Finer than 75- $\mu$ m (No. 200) Sieve in Soils by Washing	2014
12ASTM D1556/D1556M: Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method	2015e1
13ASTM 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
14ASTM D1587/D1587M: Standard Practice for Thin-Walled Tube Sampling of Fine-Grained Soils for Geotechnical Purposes	2015
15ASTM D1883: Standard Test Method for California Bearing Ratio (CBR) of Laboratory-Compacted Soils	2014
16ASTM D2166/D2166M: Standard Test Method for Unconfined Compressive Strength of Cohesive Soil	2013
17ASTM D2167: Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method	2015
18ASTM D2487: Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)	2011
19ASTM D2488: Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)	2009a



20	ASTM D2844/D2844M: Standard Test Method for Resistance <i>R</i> -Value and Expansion Pressure of Compacted Soils	2013
21	ASTM D2937: Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method	2010
22	ASTM D2974: Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils	2014
24	ASTM 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
25	ASTM D4220/D4220M: Standard Practices for Preserving and Transporting Soil Samples	2014
26	ASTM D4318: Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils	2010e1
27	ASTM D4429: Standard Test Method for CBR (California Bearing Ratio) of Soils in Place	2009a
28	ASTM D4943: Standard Test Method for Shrinkage Factors of Soils by the Wax Method	2008
29	ASTM D4972: Standard Test Method for pH of Soils	2013
	ASTM Section 4 Construction Volume 04.09 Soil and Rock (II): D5878-latest	2016
30	ASTM D6913: Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis	2009
31	ASTM D6938: Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)	2015
32	ASTM D7013/D7013M: Standard Guide for Calibration Facility Setup for Nuclear Surface Gauges	2015
33	ASTM D7380: Standard Test Method for Soil Compaction Determination at Shallow Depths Using 5-lb (2.3 kg) Dynamic Cone Penetrometer	2015
34	ASTM D7759/D7759M: Standard Guide for Nuclear Surface Moisture and Density Gauge Calibration	2014

**\* 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.

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

<u>Title</u>	<u>Edition*</u>
36AASHTO M 145: Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes	1991
37AASHTO R 13: Standard Practice for Conducting Geotechnical Subsurface Investigations	2012
38AASHTO R 18: Standard Recommended Practice for Establishing and Implementing a Quality Management System for Construction Materials Testing	2017



## Laboratories

39AASHTO T 88: Standard Method of Test for Particle Size Analysis of Soils	2013
40AASHTO T 100: Standard Method of Test for Specific Gravity of Soils	2015
41AASHTO T 134: Standard Method of Test for Moisture-Density Relations of Soil-Cement Mixtures	2005
42AASHTO T 190: Standard Method of Test for Resistance R-Value and Expansion Pressure of Compacted Soils	2014
43AASHTO T 191: Standard Method of Test for Density of Soil In-Place by the Sand-Cone Method	2014
44AASHTO T 193: Standard Method of Test for The California Bearing Ratio	2013
45AASHTO T 219: Standard Method of Test for Testing Lime for Chemical Constituents and Particle Sizes	1987
46AASHTO T 220: Standard Method of Test for Determination of Strength of Soil Lime Mixtures	1966
47AASHTO T 265: Standard Method of Test for Laboratory Determination of Moisture Content of Soils	2015
48AASHTO T 289: Standard Method of Test for Determining pH of Soil for Use in Corrosion Testing	1991

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

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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.

- 49AASHTO T 206: Standard Method of Test for Penetration Test and Split-Barrel Sampling of Soils, American Association of State Highway and Transportation Officials (AASHTO)
- 50AASHTO T 207: Standard Method of Test for Thin-Walled Tube Sampling of Soils, American Association of State Highway and Transportation Officials (AASHTO)
- 51AASHTO T 232: Standard Method of Test for Determination of Lime Content in Lime-Treated Soils by Titration, American Association of State Highway and Transportation Officials (AASHTO)
- 52ASTM C50/C50M (2013): Standard Practice for Sampling, Sample Preparation, Packaging, and Marking of Lime and Limestone Products, American Society for Testing and Materials (ASTM)
- 35ASTM D7928 (2016e1): Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
- 53Basic Construction Surveying (2000), Georgia Department of Transportation
- 54Contract Plans Reading, Florida Department of Transportation
- 55Geotechnical Testing, Observation, and Documentation, 2nd edition (2008), Tim Davis, ASCE Press
- 56Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) (2009), U.S. Department of Transportation Federal Highway Administration (FHWA)
- 57OSHA 3252-05N, Occupational Safety and Health Administration (OSHA)
- 58OSHA 29 CFR 1926: Safety and Health Regulations for Construction, Occupational Safety and Health Administration (OSHA)
- 59OSHA 3071: Job Hazard Analysis, Occupational Safety and Health Administration (OSHA)
- 60United States National CAD Standard, National Institute of Building Sciences buildingSMART alliance

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

February 5, 2022

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