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Construction Materials Testing – Asphalt

Level I Selected General References

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

Title	Edition*
ASTM Section 4 Construction Volume 04.02 Concrete and Aggregates	2016
[1]ASTM C70: Standard Test Method for Surface Moisture in Fine Aggregate	2013
[2]ASTM C117: Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing	2013
[3]ASTM C136/C136M: Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates	2014
[4]ASTM C566: Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying	2013
[5]ASTM C702/C702M: Standard Practice for Reducing Samples of Aggregate to Testing Size	2011
ASTM Section 4 Construction Volume 04.03 Road and Paving Materials; Vehicle-Pavement Systems	2016
[6]ASTM D75/D75M: Standard Practice for Sampling Aggregates	2014
[7]ASTM D979/D979M: Standard Practice for Sampling Bituminous Paving Mixtures	2015
[8]ASTM D140/D140M: Standard Practice for Sampling Bituminous Materials	2015
[9]ASTM D1461: Standard Test Method for Moisture or Volatile Distillates in Bituminous Paving Mixtures	2011
[10]ASTM D1561/D1561M: Standard Practice for Preparation of Bituminous Mixture Test Specimens by Means of California Kneading Compactor	2013
[11]ASTM D2041/D2041M: Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures	2011
[12]ASTM D2172/D2172M: Standard Test Methods for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures	2011
[13]ASTM D2419: Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate	2014
[14]ASTM D2489/D2489M: Standard Practice for Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures	2008
[15]ASTM D2726/D2726M: Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures	2014
[16]ASTM D2950/D2950M: Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods	2014
[17]ASTM D3665: Standard Practice for Random Sampling of Construction Materials	2012
[18]ASTM D3744/D3744M: Standard Test Method for Aggregate Durability Index	2011a
[19]ASTM D4125/D4125M: Standard Test Methods for Asphalt Content of Bituminous Mixtures by the Nuclear Method	2010
[20]ASTM D4791: Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate	2010
[21]ASTM D4867/D4867M: Standard Test Method for Effect of Moisture on Asphalt Concrete Paving Mixtures	2014

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[22]ASTM D5361/D5361M: Standard Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing	2014
[23]ASTM D5821: Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate	2013
[24]ASTM D6307: Standard Test Method for Asphalt Content of Hot-Mix Asphalt by Ignition Method	2010
[25]ASTM D6927: Standard Test Method for Marshall Stability and Flow of Asphalt Mixtures	2015
[26]ASTM E1703/E1703M: Standard Test Method for Measuring Rut-Depth of Pavement Surfaces Using a Straightedge	2015
[27]ASTM E1927: Standard Guide for Conducting Subjective Pavement Ride Quality Ratings	2012
ASTM Section 4 Construction Volume 04.08 Soil and Rock (I)	2016
[29]ASTM D698: Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft^3 (600 kN-m/m^3))	2012e2
[30]ASTM D2488: Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)	2009a
[31]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
ASTM Section 4 Construction Volume 14.02 Particle and Spray Characterization; Forensic Sciences; Accreditation & Certification; Forensic Psychophysiology; Nanotechnology; Forensic Engineering	2016
[28]ASTM E11: Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves	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: candidates may bring older or newer editions—instead of the editions listed above—at their own risk.

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:**

Title	Edition*
[32]AASHTO R 18: Standard Recommended Practice for Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories	2017
[33]AASHTO T 11: Standard Method of Test for Materials Finer Than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing	2005
[34]AASHTO T 27: Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates	2014
[35]AASHTO T 30: Standard Method of Test for Mechanical Analysis of Extracted Aggregate	2015
[36]AASHTO T 85: Standard Method of Test for Specific Gravity and Absorption of Coarse Aggregate	2014

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[37]AASHTO T 166: Standard Method of Test for Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens	2016
[38]AASHTO T 209: Standard Method of Test for Theoretical Maximum Specific Gravity (Gmm) and Density of Hot Mix Asphalt (HMA)	2012
[39]AASHTO T 275: Standard Method of Test for Bulk Specific Gravity (GMB) of Compacted Hot Mix Asphalt (HMA) Using Paraffin-Coated Specimens	2007
[40]AASHTO T 329: Standard Method of Test for Moisture Content of Asphalt Mixtures by Oven Method	2015
[41]AASHTO T 335: Standard Method of Test for Determining the Percentage of Fracture in Coarse Aggregate	2009

*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.

[42]Basic Construction Surveying (2000), Georgia Department of Transportation
[43]Basic Highway Plan Reading: Inspector Qualification Series, Colorado Department of Transportation
[44]Basic Surveying, 4th edition, Walter S. Whyte and Raymond E. Paul, Taylor & Francis Group
[45]Contract Plans Reading, Florida Department of Transportation
[46]FP-14: Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, U.S. Department of Transportation Federal Highway Administration (FHWA)
[47]Fundamentals of Engineering Drawing for Design, Product Development, and Numerical Control (1977), Warren Jacob Luzadder, Prentice-Hall
[48]Geotechnical Testing, Observation, and Documentation, 2nd edition (2008), Tim Davis, ASCE Press
[49]OSHA 3151-12R 2004, U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)
[50]Pocket Ref, 4th edition (2010) Thomas J. Glover, Sequoia Publishing
[51]Transportation 49 CFR 172: Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans (Subpart H), Department of Transportation, Pipeline and Hazardous Material Safety Administration
[52]Worker Safety Series: Construction, Occupational Safety and Health Administration (OSHA)

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

November 17, 2020

footnote number is linked to a task on the Content Outline

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