

LABORATORY TESTS

Materials Testing



Soils

- Particle Size Analysis of Soils (ASTM D422 / AASHTO T 88)
- Particle-Size Distribution (Gradation) of Soils
 Using Sieve Analysis
 (ASTM D6913 / AASHTO T 311)
- Shrinkage Factors of Soils by Wax Method (ASTM D4943)
- Laboratory Compaction Characteristics of Soil Using Standard Effort (ASTM D698 / AASHTO T 99)
- Specific Gravity of Soil (ASTM D854 / AASHTO T 100)
- Amount of Material in Soils Finer than No. 200
 Sieve (ASTM D1140)
- Laboratory Compaction Characteristics of Soil Using Modified Effort (ASTM D1557 / AASHTO T 180)
- CBR (California Bearing Ratio) of Laboratory Compacted Soils (ASTM D1883 / AASHTO T 193)
- Unconfined Compressive Strength of Cohesive Soil (ASTM D2166 / AASHTO T 208)
- Laboratory Determination of Water (Moisture)
 Content of Soil and Rock
 (ASTM D2216 / AASHTO T 265)
- One Dimensional Consolidation Properties of Soils (ASTM D2435 / AASHTO T 216)
- Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils (ASTM D2850 / AASHTO T 296)
- Density of Soil and Soil-Aggregate in Place by Nuclear Methods
 (ASTM D2922 / ASTM D6938 / AASHTO T310)
- Density of Soil and Soil Aggregate in-Place by Sand Cone Methods (ASTM D1558 / AASHTO T 191)
- Water Content of Soil and Rock in Place by Nuclear Methods (AASHTO T 289)
- pH of Soils (AASHTO T 289)
- Sulfate Ion Content in Soils (AASHTO T 290)
- Chloride Ion Content in Soils (AASHTO T 291)
- Liquid Limit, Plastic Limit, and Plasticity Index of Soils (ASTM D4318 / AASHTO T 89 & T 90)
- Consolidated Undrained Triaxial Compression Test for Cohesive Soils (ASTM D4767/AASHTO T 297)
- Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter (ASTM D5084)

- Laboratory Determination of Soil Resistivity (ASTM G57 / AASHTO T 288)
- Moisture Density Relationship of Soil-Cement Mixtures (ASTM D558 / AASHTO T 134)



Rock

 Compressive Strength of Intact Rock Core Specimens (ASTM D7012)



Aggregates

- Bulk Density ("Unit Weight") and Voids in Aggregate(ASTM C29 / AASHTO T 19)
- Organic Impurities in Fine Aggregates for Concrete (ASTM C40 / AASHTO T 21)
- Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing (ASTM C117 / AASHTO T 11)
- Density, Specific Gravity and Absorption of Coarse Aggregate (ASTM C127 / AASHTO T 85)
- Density, Specific Gravity and Absorption of Fine Aggregate (ASTM C128 / AASHTO T 84)
- Sieve Analysis of Fine and Coarse Aggregates (ASTM C136 / AASHTO T 27)
- Total Evaporable Moisture Content of Aggregate by Drying (ASTM C566 / AASHTO T 255)



Hot mix asphalt

- Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures (ASTM D2041 / AASHTO T 209)
- Bulk Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface Dry Specimens (ASTM D2726 / AASHTO T 166)
- Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures (ASTM D3202 / AASHTO T 269)

- Mechanical Size Analysis of Extracted Aggregate (HMA)
 (ASTM D5444 / AASHTO T 30)
- Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method (ASTM D6307 / AASHTO T 308)
- Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor (ASTM D6925 / AASHTO T 312)
- Preparation of Bituminous Specimens using Marshall Apparatus (ASTM D6926)



Asphalt binder

- Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (ASTM D7175 / AASHTO T 316)
- Viscosity of Asphalt at Elevated Temperatures
 Using a Rotational Viscometer
 (ASTM D4402 / AASHTO T 315)



Concrete

- Making and Curing Concrete Test Specimens in the Field (ASTM C31)
- Compressive Strength of Cylindrical Concrete Specimens (ASTM C39)
- Obtaining and Testing Drilled Cores and Sawed Beams of Concrete (ASTM C42)
- Flexural Strength of Concrete (ASTM C78)
- Density (Unit Weight), Yield, and Air Content of Concrete (ASTM C138)
- Slump of Hydraulic-Cement Concrete (ASTM C143)
- Air Content of Freshly Mixed Concrete by the Volumetric Method (ASTM C173)
- Air Content of Freshly Mixed Concrete by the Pressure Method (ASTM C231)
- Temperature of Freshly Mixed Hydraulic-Cement Concrete (ASTM C1064)
- Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration (ASTM C1202/AASHTO T 277)