



Test Method Coverage

QESTLab



Introduction

Electronic worksheets are screens that conform to an ASTM, AASHTO, State Authority or other test method. They collect all the information required by the method and perform calculations and checks according to the method.

QESTLab is not restricted to the test methods detailed here and currently supports more than 600 electronic worksheets for test methods from various jurisdictions around the globe. Support for new test methods is continually being developed as a need arises. In addition, QESTLab also provides functionality that allows the customer to extend the system to incorporate electronic worksheets based on Microsoft Excel.

*Indicates an electronic worksheet that allows for the entry of test results and other data required for reporting only (does not perform calculations).

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AASHTO

American Association of State Highway and Transportation Officials

Method	Name
Concrete/Grout/Masonry/Mortar	
T 22	Compressive Strength of Cylindrical Concrete Specimens
T 97	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
T 119	Slump of Hydraulic Cement Concrete
T 121	Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
T 152	Air Content of Freshly Mixed Concrete by the Pressure Method
T 196	Air Content of Freshly Mixed Concrete by the Volumetric Method
T 309	Temperature of Freshly Mixed Portland Cement Concrete
T 325	Estimating the Strength of Concrete in Transportation Construction by Maturity Tests
Aggregate/Soil	
M 145	Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
T 11	Materials Finer Than 75 μ m
T 19	Bulk Density ("Unit Weight") and Voids in Aggregate
T 21	Organic Impurities in Fine Aggregates for Concrete
T 27	Sieve Analysis of Fine and Coarse Aggregates
T 30	Mechanical Analysis of Extracted Aggregate
T 84	Specific Gravity and Absorption of Fine Aggregate
T 85	Specific Gravity and Absorption of Coarse Aggregate
T 88	Particle Size Analysis of Soils
T 89	Determining the Liquid Limit of Soils
T 90	Determining the Plastic Limit and Plasticity Index of Soils
T 96	Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
T 99	Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
T 100	Specific Gravity of Soils
T 104	Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate
T 112	Clay Lumps and Friable Particles in Aggregate
T 113	Lightweight Pieces in Aggregate

Method	Name
T 176	Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test
T 180	Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
T 190	Resistance R-Value and Expansion Pressure of Compacted Soils
T 193	Standard Method of Test for the California Bearing Ratio
T 255	Total Evaporable Moisture Content of Aggregate by Drying
T 265	Laboratory Determination of Moisture Content of Soils
T 304	Uncompacted Void Content of Fine Aggregate
T 310	In-Place Density and Moisture Content of Soil-Aggregate by Nuclear Methods (Shallow Depth)
T 330	Methylene Blue Value
Hot Mix Asphalt	
T 164	Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt (HMA)
T 166	Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens
T 209	Theoretical Maximum Specific Gravity (Gmm) and Density of Hot Mix Asphalt (HMA)
T 245	Resistance to Plastic Flow of Asphalt Mixtures using Marshall Apparatus
T 246	Resistance to Deformation and Cohesion of Hot Mix Asphalt (HMA) by Means of Hveem Apparatus
T 269	Percent Air Voids in Compacted Dense and Open Asphalt Mixtures
T 275	Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Paraffin-Coated Specimens
T 283	Resistance of Compacted Asphalt Mixtures to Moisture-Induced Damage
T 308	Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by Ignition Method
T 312	Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyrotory Compactor
T 335	Determining the Percentage of Fracture in Coarse AggregateTP
TP 63	APA Rut Test

ASTM

American Society for Testing and Materials

Method	Standard Name
Concrete/Grout/Masonry/Mortar	
C 39	Compressive Strength of Cylindrical Concrete Specimens
C 42	Drilled Cores and Sawed Beams of Concrete
C 78	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
C 109	Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
C 138	Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
C 140	Concrete Masonry Units and Related Units (Except Annex 2)
C 143	Slump of Hydraulic-Cement Concrete
C 173	Air Content of Freshly Mixed Concrete by the Volumetric Method
C 231	Air Content of Freshly Mixed Concrete by the Pressure Metho
C 293	Flexural Strength of Concrete (Using Simple Beam With Center-Point Loading)
C 495	Compressive Strength of Lightweight Insulating Concrete
C 496	Splitting Tensile Strength of Cylindrical Concrete Specimens
C 579	Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
C 780	Mortars for Plain and Reinforced Unit Masonry
C 873	Concrete Cylinders Cast in Place in Cylindrical Molds
C 1019	Sampling and Testing Grout
C 1107	Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
C 1140	Shotcrete Test Panels
C 1604	Drilled Cores of Shotcrete
C 174	Measuring Thickness of Concrete Elements Using Drilled Concrete Cores
C 805	Rebound Number of Hardened Concrete
C 995	Time of Flow of Fiber-Reinforced Concrete Through Inverted Slump Cone
C 1064	Temperature of Freshly Mixed Hydraulic-Cement Concrete
C 1074	Estimating Concrete Strength by the Maturity Method
F 1869	Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
C 1314	Compressive Strength of Masonry Prisms
C 1611	Slump Flow of Self-Consolidating Concrete
C 1621 (Metric Only)	Standard Test Method for Passing Ability of Self-Consolidating Concrete by J-Ring

Method	Standard Name
C 1712 (Metric Only)	Standard Test Method for Rapid Assessment of Static Segregation Resistance of Self-Consolidating Concrete Using Penetration Test

Method	Standard Name
Aggregate/Soil	
C 29	Bulk Density ("Unit Weight") and Voids in Aggregate
C 40	Organic Impurities in Fine Aggregates for Concrete
C 88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
C 117	Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
C 123	Lightweight Particles in Aggregate
C 127	Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
C 128	Relative Density (Specific Gravity) and Absorption of Fine Aggregate
C 131	Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
C 136	Sieve Analysis of Fine and Coarse Aggregates
C 117	Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
C 142	Clay Lumps and Friable Particles in Aggregates
C 535	Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
C 566	Total Evaporable Moisture Content of Aggregate by Drying
C 1252	Uncompacted Void Content of Fine Aggregate
D 422	Particle Size Analysis of Soils
D 558	Moisture-Density (Unit Weight) Relations of Soil-Cement Mixtures
D 559	Wetting and Drying Compacted Soil-Cement Mixtures
D 698	Laboratory Compaction Characteristics of Soil Using Standard Effort (Proctor) (Imperial and Metric)
D 854	Specific Gravity of Soil Solids by Water Pycnometer
D 1140	Amount of Material Finer than No. 200 (75 μ m) Sieve in Soils
D 1556	Density and Unit Weight of Soil in Place by Sand-Cone Method
D 1557	Laboratory Compaction Characteristics of Soil Using Modified Effort (Proctor) (Imperial and Metric)
D 1632	Soil-Cement Compression and Flexure Test Specimens in the Laboratory
D 1633	Compressive Strength of Molded Soil-Cement Cylinders
D 1883	California Bearing Ratio (CBR) of Laboratory-Compacted Soils
D 2166	Unconfined Compressive Strength of Cohesive Soil
D 2216	Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

Method	Standard Name
D 2419	Sand Equivalent Value of Soils and Fine Aggregate
D 2434	Permeability of Granular Soils (Constant Head)
D 2435	One-Dimensional Consolidation Properties of Soils Using Incremental Loading
D 2487	Unified Soil Classification System
D 2488	Description and Identification of Soils (Visual-Manual Procedure)
D 2844	Resistance R-Value and Expansion Pressure of Compacted Soils
D 2937	Density of Soil in Place by the Drive-Cylinder Method
D 2974	Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
D 4254	Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
D 4253	Maximum Index Density and Unit Weight of Soils Using a Vibratory Table*
D 4254	Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density*
D 4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
D 4546	One-Dimensional Swell or Collapse of Soils
D 4791	Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
D 5084	Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter (Method C only)
D 5821	Percentage of Fractured Particles in Coarse Aggregate
D 6913	Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis

Method	Standard Name
Bitumen/Binder	
D 5	Penetration of Bituminous Materials
D 36	Softening Point of Bitumen (Ring-and-Ball Apparatus)
D 244	Asphalt Residue (Evaporation Only)
D 2170	Kinematic Viscosity of Asphalts
D 2196	Brookfield Viscosity of Emulsion
D 4402	Brookfield Viscosity of Asphalt
Hot Mix Asphalt	
D 1188	Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
D 1560	Resistance to Deformation and Cohesion of Asphalt Mixtures by Means of Hveem Apparatus
D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
D 2172	Quantitative Extraction of Asphalt Binder from Asphalt Mixtures
D 2726	Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures
D 2950	Density of Bituminous Concrete in Place by Nuclear Methods
D 3203	Percent Air Voids in Compacted Asphalt Mixtures
D 3549	Thickness or Height of Compacted Asphalt Mixture Specimens
D 4867	Moisture on Asphalt Concrete Paving Mixtures (Imperial and Metric)
D 5444	Mechanical Size Analysis of Extracted Aggregate
D 6307	Asphalt Content of Asphalt Mixture by Ignition Method
D 6752	Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing
D 6927	Marshall Stability and Flow of Asphalt Mixtures
Steel	
A370	Mechanical Testing of Steel Products

States

California Department of Transportation (Caltrans)

Method	Name
Aggregate/Soil	
216	Relative Compaction of Untreated and Treated Soils and Aggregates (Sand Cone)
227	Cleanness Value
Concrete/Grout/Masonry/Mortar	
523	Flexural Strength of Concrete
Steel	
670	Mechanical and Welded Reinforcing Steel Splices/Hoops

Minnesota Department of Transportation (MnDOT)

Method	Name
Aggregate/Soil	
1205	Sieve Analysis with Wash
1203	Mechanical Size Analysis of Extracted Aggregate
1204	Specific Gravity of Coarse Aggregate
1205	Specific Gravity of Fine Aggregate
1206	Uncompacted Void Content
1207	Chert Particles
1207	Lightweight Particles
1209	Spall Lithological Summary
1210	LA Abrasion
1211	Bulk Density ("Unit Weight") and Voids
1212	Organic Impurities
1215	Sand Equivalent
1305	Create Standard Proctor
1307	R Value of Compacted Soils
Hot Mix Asphalt	
1805	Marshall Stability
1806	Bulk Specific Gravity of Asphalt
1806	Bulk Specific Gravity of Asphalt (Gyratory)
1806	Bulk Specific Gravity of Asphalt (Marshall)
1807	Rice Specific Gravity
1808	Air Voids
1816	Bulk Specific Gravity Using Corelok
1852	Asphalt Content by Centrifuge Extraction
1853	Asphalt Binder Content by Ignition Method

Nevada Department of Transportation (NDOT)

Method	Name
T 101E	Harvard Miniature
T 111	Specific Gravity of Coarse Aggregate
T 115	R Value of Compacted Soils
T 206	Sieve Analysis
T 210 / T 211/T 212	Atterberg Limits
T 227	Sand Equivalent
T 228	Cleanness Value
T 230	Fractured Faces
T 233	Los Angeles Value
T 324	Rice Specific Gravity
T 333	Bulk Specific Gravity of Asphalt
T 341	Moisture Susceptibility
T 431	Air Content Of Concrete
T 470	Sodium Sulfate Soundness
T 485	Los Angeles Value
T 724	Asphalt Content
T 761	Asphalt Content
T 761	Ignition Oven Calibration

Texas Department of Transportation (TxDOT)

Method	Name
Aggregate/Soil	
101-E	Part III Particle Size Analysis
103-E	Moisture Content of Aggregates
104-E	Atterberg Limits
107-E	Bar Linear Shrinkage
110-E	Particle Size Analysis
111-E	Determination of Amount of Material in Soils Finer than the 75 um (No. 200) Sieve
112-E	Admixing lime to reduce plasticity index of soils
113-E	Moisture Density Relations of Base Material and Cohesionless Sands
114-E	Moisture Density Relations of Sub Grade & Embankment Soils
115-E	Nuclear Density and Moisture Determination
116-E	Resistance to Degradation by Wet Ball Mill Method
117-E	Triaxial Compression Tests
120-E	Soil Cement - Soil Lime Testing
121-E	Soil lime Testing
126-E	Density of Asphalt Stabilized Base
128-E	Determining pH of Soil
129-E	Measuring Resistivity of Soils
140-E	Measuring Thickness of Pavement Layer
600-J	Sampling and Testing Hydrated Lime Quicklime and Commercial Lime Slurry
620-J	Determining Chloride and Sulphate Content in Soils
Hot Mix Asphalt	
200-F	Sieve Analysis of Non Surface Treatment Aggregates
200-ST	Sieve Analysis of Surface Treatment Aggregates
203-F	Sand Equivalent
207-FPL	Placement Density
208-F	Test for stabilometer value of bituminous mixtures
210-F	Determining asphalt content of bituminous mixtures by extraction
217-F	Deleterious Material and Verification of Coarse Aggregate
224-F	Determining of Flakiness Index
235-F	Determining Drain Down Characteristics of Bituminous Material

Method	Name
Concrete/Grout/Masonry/Mortar	
401-A	Sieve Analysis for Fine and coarse Aggregate
403-A	Saturated surface-dry specific gravity and absorption of aggregates
404-A	Determining unit mass (weight) of aggregates
406-A	Decantation Test for Concrete Aggregate
408-A	Organic Impurities in Fine Aggregates for Concrete
409-A	Free moisture and water absorption in aggregate for concrete
410-A	Resistance to Degradation by Abrasion and Impact in LA Machine
411-A	Magnesium Sulfate Soundness
412-A	Lightweight pieces in aggregate
413-A	Deleterious Material
423-A	Determining Pavement Thickness by Direct Measurement
424-A	Testing of Drilled Cores for Portland Cement Concrete
424-A	Testing of Drilled Cores for Portland Cement Concrete
448-A	Concrete sample - Beams
460-A	Coarse Aggregate Angularity by Fractured Face Count
Bitumen/Binder	
530-C	Effect of Water on Bituminous Paving Mixtures (Boiling & Striping)

APHA

American Public Health Association

Method	Name
2130B	Turbidity In Water
2540B	Total Solids
2540C	Total Dissolved Solids
2540D	Non Filterable Residue

AWWA

American Water Works Association

Method	Name
3500, 4500E, 4500C-B, 2540C	Water Soluble Salt Analysis

Note: Although every effort has been made to ensure that the above information is correct, Spectra QEST makes no guarantee as to its accuracy.



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