



USACE CERTIFICATE  
OF  
LABORATORY VALIDATION



**Millennium Engineers Group, Inc.**

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has demonstrated, by abbreviated audit of its AASHTO accreditation, or by inspection of required records, equipment, procedures, facilities, and/or final reports, its proficiency to perform testing of construction materials, as established by the quality standards of AASHTO R 18 guidance and the requirements of the applicable ASTM standards.

**THIS USACE CERTIFICATE OF LABORATORY VALIDATION IS ACCURATE AS OF ITS DATE AND TIME OF GENERATION:**

**16 AUG 2019 AT 08:17 HOURS**

**ALL METHODS LISTED ON THIS CERTIFICATE OF VALIDATION WILL EXPIRE ON 05/28/2021**

PLEASE CONFIRM THE CURRENT VALIDATION STATUS OF THIS LABORATORY USING THE SEARCH FEATURE ON OUR PUBLIC WEBSITE: <https://mtc.erdcdren.mil>

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USACE Materials Testing Center  
Vicksburg, Mississippi, USA

**AGGREGATE**

Aggregate - C 29 - Opt - Unit Weight and Voids in Aggregate  
Aggregate - C 40 - Opt - Organic Impurities  
Aggregate - D 75 - Opt - Sampling  
Aggregate - C 88 - Opt - Sulfate Soundness  
Aggregate - C 117 - Req - Material Finer than 75 µm (No. 200) Sieve  
Aggregate - C 127 - Req - Specific Gravity & Absorption in Coarse Aggregate  
Aggregate - C 128 - Req - Specific Gravity & Absorption in Fine Aggregate  
Aggregate - C 136 - Req - Sieve Analysis of Aggregates  
Aggregate - C 142 - Opt - Clay Lumps  
Aggregate - E 329 - Opt - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection  
Aggregate - D 546 - Opt - Sieve Analysis of Mineral Filler  
Aggregate - C 566 - Opt - Total Moisture Content  
Aggregate - C 702 - Opt - Reducing Samples to Testing Size  
Aggregate - C 1077 - Opt - Concrete and Concrete Aggregate Testing Standards (Quality Standards)  
Aggregate - D 2419 - Opt - Sand Equivalent Value  
Aggregate - D 3666 - Opt - Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials  
Aggregate - D 4791 - Opt - Flat and Elongated Particles in Course Aggregate  
Aggregate - D 5821 - Opt - Percentage of Fractured Particles in Coarse Aggregate

**BITUMINOUS**

Bituminous - TEX 206 - Opt - TEXAS DOT - Compacting Asphalt with Texas Gyrotory Compactor  
Bituminous - Tex-F 208 - Opt - Test for Stabilometer Value of Bituminous Mixtures  
Bituminous - E 329 - Opt - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection  
Bituminous - D 979 - Req - Sampling Bituminous Paving Mixtures  
Bituminous - D 2041 - Req - Theoretical Maximum Specific Gravity & Density (Rice)  
Bituminous - D 2726 - Req - Bulk Specific Gravity and Density  
Bituminous - D 2950 - Req - Density of Bituminous Concrete in Place by Nuclear Methods  
Bituminous - D 3203 - Req - Percent Air Voids

Bituminous - D 3666 - Opt - Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials  
 Bituminous - D 5444 - Req - Mechanical Size Analysis of Extracted Aggregate  
 Bituminous - D 6307 - Req - Asphalt Content of Hot-Mix Asphalt by Ignition Method  
 Bituminous - D 6926 - Req - Preparation of Bituminous Specimens using Marshall  
 Bituminous - D 6927 - Req - Marshall Stability and Flow of Bituminous Mixtures

## CONCRETE

Concrete - C 31 - Req - Making and Curing Test Specimens in the Field  
 Concrete - C 39 - Req - Compressive Strength of Cylindrical Specimens  
 Concrete - C 42 - Opt - Drilled Cores and Sawed Beams  
 Concrete - C 138 - Req - Unit Weight and Air Content by Gravimetric  
 Concrete - C 143 - Req - Slump  
 Concrete - C 172 - Req - Sampling  
 Concrete - C 173 - Req - Air Content by Volumetric \*\*\*required if C231 not performed\*\*\*  
 Concrete - C 231 - Req - Air Content by Pressure \*\*\*required if C173 not performed\*\*\*  
 Concrete - C 511 - Opt - Moist Cabinets, Moist Rooms, Water Storage Tanks  
 Concrete - C 617 - Opt - Capping Cylindrical Specimens  
 Concrete - C 1064 - Req - Temperature of Concrete  
 Concrete - C 1077 - Opt - Concrete and Concrete Aggregate Testing Standards (Quality Standards)  
 Concrete - C 1231 - Opt - Unbonded Caps  
 Concrete - C 1542 - Opt - Measuring Length of Concrete Cores

## MASONRY

Masonry - C 780 - Req - Evaluation of Mortars for Plain and Reinforced Unit Masonry

## SOILS

Soils - G 51 - Opt - Measuring pH of Soil for Use in Corrosion Testing  
 Soils - G 57 - Opt - Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method  
 Soils - G 187 - Opt - Measurement of Soil Resistivity Using the Two-Electrode Soil Box Method  
 Soils - E 329 - Opt - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection  
 Soils - D 421 - Req - Dry Preparation for Particle Size Distribution & Soil Constants  
 Soils - D 422 - Req - Particle Size Analysis  
 Soils - D 558 - Req - Moisture-Density of Soil-Cement  
 Soils - D 559 - Req - Wetting & Drying Soil-Cement  
 Soils - D 698 - Req - Compaction Characteristics by Standard Effort  
 Soils - D 854 - Req - Specific Gravity of Soils  
 Soils - D 1140 - Req - Material Finer than 75  $\mu$ m (No. 200) Sieve  
 Soils - D 1556 - Req - Density & Unit Weight by Sand Cone  
 Soils - D 1557 - Req - Compaction Characteristics by Modified Effort  
 Soils - D 1883 - Req - CA Bearing Ratio (CBR)  
 Soils - D 2166 - Req - Unconfined Compressive Strength  
 Soils - D 2216 - Req - Water Content  
 Soils - D 2434 - Opt - Permeability of Granular Soils (Constant Head Method) (Withdrawn 2015)  
 Soils - D 2435 - Req - One-Dimensional Consolidation Properties  
 Soils - D 2487 - Req - Classification of Soils  
 Soils - D 2488 - Req - Description & Identification of Soils (Visual-Manual Procedure)  
 Soils - D 2850 - Req - Unconsolidated, Undrained Strength in Triaxial Compression  
 Soils - D 2937 - Req - Density by Drive Cylinder Method  
 Soils - D 3740 - Opt - Soil and Rock Testing Standards (Quality Standard)  
 Soils - D 4318 - Req - Liquid & Plastic Limits & Plasticity Index  
 Soils - D 4546 - Req - One-Dimensional Swell or Settlement Potential  
 Soils - D 4643 - Req - Determination of Water Content of Soil by Microwave Oven  
 Soils - D 4718 - Opt - Correction of Unit Weight and Water Content for Soils Containing Oversize Particles  
 Soils - D 4767 - Req - Consolidated-Undrained Triaxial Compression  
 Soils - D 4829 - Opt - Expansion Index of Soils  
 Soils - D 4943 - Opt - Shrinkage Factors of Cohesive Soils by the Water Submersion Method  
 Soils - D 4972 - Opt - pH of Soils  
 Soils - D 5084 - Req - Hydraulic Conductivity using a Flexible Wall Permeameter  
 Soils - D 6913 - Req - Particle-Size Distribution of Soils Using Sieve Analysis  
 Soils - D 6938 - Req - Density and Water Content by Shallow Depth Nuclear Method  
 Soils - D 7928 - Opt - Fine Grain Distribution with Hydrometer