



USACE CERTIFICATE  
OF  
LABORATORY VALIDATION



**Bowser-Morner, 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:  
08 FEB 2023 AT 17:02 HOURS**

**ALL METHODS LISTED ON THIS CERTIFICATE OF VALIDATION WILL EXPIRE ON 12/08/2023**

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

Chad A. Gartrell, PE, Director  
USACE Materials Testing Center  
Vicksburg, Mississippi, USA

**AGGREGATE**

- Aggregate - T 11 - AASHTO - No. 200 Wash Sieve for Mineral Aggregates
- Aggregate - T 27 - AASHTO - Sieve Analysis of Aggregates
- Aggregate - C 29 - Unit Weight and Voids in Aggregate
- Aggregate - C 40 - Organic Impurities
- Aggregate - D 75 - Sampling
- Aggregate - T 84 - AASHTO - Specific Gravity and Absorption of Fine Agg
- Aggregate - T 85 - AASHTO - Specific Gravity and Absorption of Course Agg
- Aggregate - C 87 - Effects of Organic Impurities on Mortar Strength
- Aggregate - C 88 - Sulfate Soundness
- Aggregate - C 117 - Material Finer than 75 µm (No. 200) Sieve
- Aggregate - C 123 - Lightweight Particles
- Aggregate - C 127 - Specific Gravity & Absorption in Coarse Aggregate
- Aggregate - C 128 - Specific Gravity & Absorption in Fine Aggregate
- Aggregate - CRD 130 - Scratch Hardness
- Aggregate - C 131 - Los Angeles Abrasion Resistance on Small-Size Coarse Aggregate
- Aggregate - C 136 - Sieve Analysis of Aggregates
- Aggregate - C 142 - Clay Lumps
- Aggregate - T 210 - AASTO - Aggregate Durability Index
- Aggregate - C 227 - Alkali Reactivity of Cement-Aggregate Combinations (Mortar-Bar)
- Aggregate - C 289 - Potential Alkali-Silica Reactivity of Aggregates (Chemical Method) (Withdrawn 2016)
- Aggregate - C 295 - Petrographic Examination
- Aggregate - E 329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
- Aggregate - C 535 - Los Angeles Abrasion Resistance on Large Size Coarse Aggregate
- Aggregate - C 566 - Total Moisture Content
- Aggregate - C 586 - Alkali Reactivity of Carbonate Rocks (Rock Cylinder Method)
- Aggregate - C 702 - Reducing Samples to Testing Size
- Aggregate - C 1077 - Concrete and Concrete Aggregate Testing Standards (Quality Standards)
- Aggregate - C 1105 - Length Change Due to Alkali-Carbonate Reaction
- Aggregate - C 1252 - Uncompacted Void Content of Fine Aggregate (as influenced by particle shape, surface texture, and grading)
- Aggregate - C 1260 - Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
- Aggregate - C 1293 - Length Change Alkali-Silica Reaction
- Aggregate - D 2419 - Sand Equivalent Value

Aggregate - D 3666 - Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials  
Aggregate - D 3744 - Aggregate Durability Index  
Aggregate - D 4791 - Flat and Elongated Particles in Course Aggregate  
Aggregate - D 5821 - Percentage of Fractured Particles in Coarse Aggregate  
Aggregate - D 6928 - Resistance of Coarse Agg to Degradation by Abrasion in the Micro-Deval Apparatus  
Aggregate - D 7428 - Resistance of Fine Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus

## BITUMINOUS

Bituminous - R 68 - AASHTO R68 - Preparation of Asphalt Mixes by Marshall Apparatus  
Bituminous - T 166 - AASHTO - Bulk SG Using SSD (Cores)  
Bituminous - T 245 - AASHTO - Marshall Stability and Flow  
Bituminous - T 269 - AASHTO - Percent Air Voids  
Bituminous - T 275 - AASHTO - Bulk SG of Asphalt Using Paraffin-Coated Cores  
Bituminous - E 329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection  
Bituminous - D 546 - Sieve Analysis of Mineral Filler  
Bituminous - D 1188 - Bulk Specific Gravity & Density Using Coated Samples  
Bituminous - D 2041 - Theoretical Maximum Specific Gravity & Density (Rice)  
Bituminous - D 2726 - Bulk Specific Gravity and Density  
Bituminous - D 3203 - Percent Air Voids  
Bituminous - D 3549 - Thickness or Height of Compacted Asphalt Mixture Specimens  
Bituminous - D 3666 - Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials  
Bituminous - D 6926 - Preparation of Bituminous Specimens using Marshall  
Bituminous - D 6927 - Marshall Stability and Flow of Bituminous Mixtures

## CONCRETE

Concrete - C 31 - Making and Curing Test Specimens in the Field  
Concrete - C 39 - Compressive Strength of Cylindrical Specimens  
Concrete - C 42 - Drilled Cores and Sawed Beams  
Concrete - C 78 - Flexural Strength by Third Point Loading  
Concrete - C 138 - Unit Weight and Air Content by Gravimetric  
Concrete - C 143 - Slump  
Concrete - C 157 - Length Change of Concrete and Mortars  
Concrete - C 172 - Sampling  
Concrete - C 173 - Air Content by Volumetric \*\*\*required if C231 not performed\*\*\*  
Concrete - C 174 - Concrete Thickness by Drilled Cores  
Concrete - C 192 - Making and Curing Test Specimens in Laboratory  
Concrete - C 215 - Fundamental Frequencies of Concrete  
Concrete - C 231 - Air Content by Pressure \*\*\*required if C173 not performed\*\*\*  
Concrete - C 293 - Flexural Strength by Center Point Loading  
Concrete - E 329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection  
Concrete - C 403 - Time of Setting by Penetration Resistance  
Concrete - C 418 - Abrasion Resistance by Sand Blasting  
Concrete - C 469 - Static Modulus of Elasticity and Poisson's Ratio  
Concrete - C 496 - Splitting Tensile Strength  
Concrete - C 511 - Moist Cabinets, Moist Rooms, Water Storage Tanks  
Concrete - C 512 - Creep of Concrete in Compression  
Concrete - C 617 - Capping Cylindrical Specimens  
Concrete - C 642 - Density, Absorption, and Voids  
Concrete - C 666 - Freezing & Thawing Concrete Specimens  
Concrete - C 672 - Scaling Resistance by Deicing Chemicals  
Concrete - C 803 - Penetration Resistance of Hardened Concrete  
Concrete - C 805 - Rebound Number of Hardened Concrete  
Concrete - C 1064 - Temperature of Concrete  
Concrete - C 1077 - Concrete and Concrete Aggregate Testing Standards (Quality Standards)  
Concrete - C 1152 - Acid-Soluble Chloride in Concrete  
Concrete - C 1218 - Water-Soluble Chloride in Concrete  
Concrete - C 1231 - Unbonded Caps  
Concrete - C 1542 - Measuring Length of Concrete Cores  
Concrete - C 1567 - Potential Alkali Silica Reactivity Cementitious Materials and Aggregate Accelerated Mortar Bar Method

## MASONRY

Masonry - C 67 - Sampling and Testing Brick and Structural Clay Tile  
Masonry - C 109 - Compressive Strength of Cement Mortars Using Cube Specimens  
Masonry - C 140 - Sampling and Testing Concrete Masonry and Related Units  
Masonry - C 185 - Air Content of Hydraulic Cement Mortar  
Masonry - C 270 - Mortar for Unit Masonry  
Masonry - C 305 - Mechanical Mixing of Cement Pastes & Mortars of Plastic Consistency  
Masonry - C 426 - Linear Drying Shrinkage of Concrete Masonry Units  
Masonry - C 511 - Mixing Rooms, Moist Cabinets, Cure Tanks  
Masonry - C 1019 - Sampling and Testing Grout  
Masonry - C 1093 - Masonry Testing Standard (Quality Standards)

Masonry - C 1314 - Compressive Strength of Masonry Prisms  
Masonry - C 1437 - Flow of Hydraulic Cement Mortar  
Masonry - C 1437 - Flow of Hydraulic Cement Mortar  
Masonry - C 1506 - Water Retention of Hydraulic Cement-Based Mortars and Plasters  
Masonry - C 1552 - Capping Concrete Masonry Units and Related for Compression Testing

## ROCK

Rock - CRD 144 - Resistance of Rock to Freezing and Thawing  
Rock - CRD 169 - Resistance of Rock to Wetting and Drying  
Rock - D 3967 - Tensile Strength, Splitting (Brazilian) Method  
Rock - D 4543 - Preparing Rock Core Specimens and Determining Tolerances  
Rock - D 4644 - Slake Durability of Shales and Weak Rocks  
Rock - D 5240 - Evaluating Durability of Rock for Erosion Control Using Sodium Sulfate or Magnesium Sulfate  
Rock - D 5312 - Durability of Rock to Freezing and Thawing  
Rock - D 5313 - Durability of Rock to Wetting and Drying  
Rock - D 5731 - Point Load Index  
Rock - D 6473 - Specific Gravity and Absorption of Rock for Erosion Control  
Rock - D 7012 - Compressive Strength & Elastic Moduli of Rock Core Specimens - Method C - Uniaxial Comp. Strength

## SOILS

Soils - T 100 - AASHTO - Specific Gravity of Soils  
Soils - G 187 - Measurement of Soil Resistivity Using the Two-Electrode Soil Box Method  
Soils - D 421 - Dry Preparation for Particle Size Distribution & Soil Constants  
Soils - D 422 - Particle Size Analysis (Sieve and Hydrometer)  
Soils - D 558 - Moisture-Density of Soil-Cement  
Soils - D 559 - Wetting & Drying Soil-Cement  
Soils - D 560 - Freezing & Thawing Soil-Cement  
Soils - D 698 - Compaction Characteristics by Standard Effort  
Soils - D 854 - Specific Gravity of Soils  
Soils - D 1140 - Material Finer than 75  $\mu$ m (No. 200) Sieve  
Soils - D 1557 - Compaction Characteristics by Modified Effort  
Soils - D 1633 - Compressive Strength of Molded Soil-Cement Cylinders  
Soils - D 1883 - CA Bearing Ratio (CBR)  
Soils - D 2166 - Unconfined Compressive Strength  
Soils - D 2216 - Water Content  
Soils - D 2434 - Permeability of Granular Soils (Constant Head Method) (Withdrawn 2015)  
Soils - D 2435 - One-Dimensional Consolidation Properties  
Soils - D 2487 - Classification of Soils  
Soils - D 2488 - Description & Identification of Soils (Visual-Manual Procedure)  
Soils - D 2850 - Unconsolidated, Undrained Strength in Triaxial Compression  
Soils - D 2974 - Moisture, Ash, & Organic Matter of Peat & Other Organic Soils  
Soils - D 3080 - Direct Shear Test in Consolidated Drained Conditions  
Soils - D 3740 - Soil and Rock Testing Standards (Quality Standard)  
Soils - D 4318 - Liquid & Plastic Limits & Plasticity Index  
Soils - D 4546 - One-Dimensional Swell or Settlement Potential  
Soils - D 4647 - Identification and Classification of Dispersive Clay Soils by the Pinhole Test  
Soils - D 4972 - pH of Soils  
Soils - D 5084 - Hydraulic Conductivity using a Flexible Wall Permeameter  
Soils - D 6913 - Particle-Size Distribution of Soils Using Sieve Analysis  
Soils - D 6938 - Density and Water Content by Shallow Depth Nuclear Method  
Soils - D 7928 - Fine Grain Distribution with Hydrometer