



**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:

18 JUN 2024 AT 09:53 HOURS

ALL METHODS LISTED ON THIS CERTIFICATE OF VALIDATION WILL EXPIRE ON 12/15/2025

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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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 - 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 1252 - Uncompacted Void Content of Fine Aggregate (as influenced by particle shape, surface texture, and grading)
 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 - T 30 - AASHTO - Sieve Analysis of Extracted Aggregates
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 2172 - Quantitative Extraction
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 5444 - Mechanical Size Analysis of Extracted Aggregate
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 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 - 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 μ m (No. 200) Sieve
Soils - D 1557 - Compaction Characteristics by Modified Effort
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 4767 - Consolidated-Undrained Triaxial Compression
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