

USACE-Certified Laboratory
Axiom Engineering Company

Lab ID: LCP-021

Issue date: Feb 1st, 2021

Expiry date: Jan 31st, 2022

This letter confirms the completion of inspection and certification for the Axiom lab, which is located at House #1, Street #2, Charahi Spin Kali, Imam-E-Azam Mosque, Khushal Khan, Kabul, Afghanistan. This laboratory shall now be considered as **USACE-Certified for a period of 12-months** from the date of this letter. This laboratory should now be considered as certified for use by the US Army Corps of Engineers Transatlantic Afghanistan District (USACE TAA) and other clients, for all tests listed in Table 1 to Table 6, as attached to this letter. This certification will be included with records that are maintained at the ABA and USACE TAA Headquarters in Bagram Airbase, Afghanistan. Retaining the certification will require yearly inspections by the ABA. This certification is also contingent upon the following conditions:

- A. Continued employment of the below individual while without his oversight, the laboratory will require recertification:
 - a. Mr. Ahmad Sanayee the laboratory manager;
- B. If the calibration certificates of equipment expire or become invalid as per the relevant standard;
- C. If the laboratory is moved to a new location, it will require recertification; and
- D. If the laboratory fails to comply by the approved lab quality management plan, safety standards, and other criteria set forth in the most up-to-date ABA lab certification manual, the lab certification may be suspended.

For verification and good standing of this certification please check our online directory of laboratories at http://aba.af/lcp_directory.php. The inspection and certification process for AXIOM adhered to procedures outlined by the Materials Testing Center (MTC), which is located at the Geotechnical and Structures Laboratory (GSL), U.S. Army Engineer Research and Development Center (ERDC) in Vicksburg, Mississippi, USA. The MTC is the USACE-authorized agency for certifying laboratories for use in quality control testing for USACE construction projects. To facilitate construction in Afghanistan, the USACE TAA has authorized the ABA to conduct laboratory certifications with strict adherence to MTC protocol. Qualifications of the authors for conducting these certifications include: 12 years of laboratory experience, 12 years of teaching classes on construction materials, and six years of teaching university-level construction classes.

Certified to perform 82 tests, as shown on attached sheets and summarized as:

Table 1: 24
Table 2: 14
Table 3: 18
Table 4: 18
Table 5: 5
Table 6: 3

Regards,




Ferdaws Khaliqi, PMP

ABA-Laboratory Certification Program Manager
(ABA-LCP)

Axiom Certified Laboratory Tests

Table 1. List of Certified Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D421	Standard Practice for Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants
2	ASTM D422	Standard Test Method for Particle Size Analysis of Soils
3	ASTM D854	Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer
4	ASTM D1140	Standard Test Methods for Amount of Material in Soils Finer than No. 200 (75µm) Sieve
5	ASTM D4318	Standard Test Methods Liquid & Plastic Limits & Plasticity Index
6	ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
7	ASTM D698	Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³ (2,700 Kn-m/m ³))
8	ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method
9	ASTM D1883	Standard Test Method for CBR (California Bearing Ratio) of Laboratory-Compacted Soils
10	ASTM D2216	Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
11	ASTM D4944	Standard Test Method for Field Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Tester
12	ASTM D6951	Standard Test Methods for Dynamic Cone Penetration (DCP) in Shallow Pavement
13	ASTM D2487	Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
14	ASTM D2488	Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
15	ASTM D3282	Standard Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purpose
16	ASTM D2435	Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading
17	ASTM D2166	Unconfined Compressive Strength of Cohesive Soil
18	ASTM D3080	Direct Shear Test of Soils Under Consolidated Drained Conditions
19	ASTM D5333	Measurement of Collapse Potential Soils
20	ASTM D1586	Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils
21	ASTM D1587	Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes
22	ASTM D1194	Standard Test Method for Bearing Capacity of Soil for Static Load and Spread Footings



No	Test Method	Test Procedure Title
23	ASTM D1195	Standard Test Method for Repetitive Static Plate Load Tests of Soils and Flexible Pavement Components, for Use in Evaluation and Design of Airport and Highway Pavement
24	ASTM D1196	Standard Test Method for Nonrepetitive Static Plate Load Tests of Soils and Flexible Pavement Components, for Use in Evaluation and Design of Airport and Highway Pavement

Table 2. List of Certified Aggregate (Fine and Coarse) Tests

No	Test Method	Test Procedure Title
1	ASTM C75	Standard Practice for Sampling of Aggregates
2	ASTM C702	Standard Practice for Reducing Samples of Aggregate to Testing Size
3	ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
4	ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
5	ASTM C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
6	ASTM C128	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
7	ASTM C29	Standard Test Method for Unit Weight and Voids in Aggregate
8	ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
9	ASTM C535	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
10	ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
11	ASTM C117	Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
12	ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
13	ASTM D4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
14	ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate

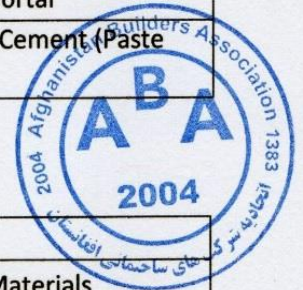
Table 3. List of Certified Cement, Grout, Mortar, & Concrete Tests

No	Test Method	Test Procedure Title
1	ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
2	ASTM C42	Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
3	ASTM C109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)

No	Test Method	Test Procedure Title
4	ASTM C192	Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
5	ASTM C617	Standard Practice for Capping Cylindrical Concrete Specimens
6	ASTM C1231	Use of Unbounded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders
7	ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
8	ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
9	ASTM C805	Standard Test Method for Rebound Number of Hardened Concrete
10	ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
11	ASTM C187	Normal Consistency of Hydraulic Cement
12	ASTM C305	Mechanical Mixing of Hydraulic Cement Paste and Mortars of Plastic Consistency
13	ASTM C191	Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
14	ASTM C184	Standard Test Method for Fineness of Hydraulic Cement by the 150- μ m (No. 100) and 75- μ m (No. 200) Sieves
15	ASTM C188	Standard Test Method for Density of Hydraulic Cement
16	ASTM C1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
17	ASTM C1437	Standard Test Method for Flow of Hydraulic Cement Mortar
18	ASTM C451	Standard Test Method for Early Stiffening of Hydraulic Cement (Paste Method)

Table 4. List of Certified Asphalt Cement and Asphalt Concrete Tests

No	Test Method	Test Procedure Title
1	ASTM D5	Standard Test Method for Penetration of Bituminous Materials
2	ASTM D36	Standard Test Method for Softening Point
3	ASTM D92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
4	ASTM D113	Standard Test Method for Ductility of Bituminous Materials
5	ASTM D70	Standard Test Method for Density of Semi-Solid of Bituminous Materials
6	ASTM D979	Standard Practice for Sampling Bituminous Paving Mixtures
7	ASTM D1188	Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
8	ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
9	ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
10	ASTM D2172	Standard Test Methods for Quantitative Extraction of Bitumen From Bituminous Paving Mixtures



No	Test Method	Test Procedure Title
11	ASTM D3549	Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimen
12	ASTM D5361	Standard Practice for Sampling compacted Bituminous Mixtures for Laboratory Testing
13	ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
14	ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
15	ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
16	ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
17	ASTM D4867	Standard Test Method for Effect of Moisture and Asphalt Concrete Paving Mixtures
18	ASTM D546	Standard Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures

Table 5. List of Certified Stone, Bricks & Masonry Units Tests

No	Test Method	Test Procedure Title
1	ASTM C67	Standard Test Methods for Sampling and Testing Brick
2	ASTM C97	Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone
3	ASTM C170	Standard Test Method for Compressive Strength of Dimension Stone
4	ASTM C1552	Standard Practice for Capping Concrete Masonry Units, Related Units and Masonry Prisms for Compression Testing
5	ASTM C140	Standard Test Method for Sampling and Testing Concrete Masonry Units Related Units

Table 6. List of Certified Steel Tests

No	Test Method	Test Procedure Title
1	ASTM A370	Standard Test Methods and Definition for Mechanical Testing of Steel Products
2	ASTM E8	Standard Test Methods for Tension Testing of Metallic Materials
3	ASTM E290	Standard Test Methods for Bend Testing of Material for Ductility