

Laboratory Certification For
Build Afghanistan Engineering Services (BAES)

Lab ID: LCP-017

Issue date: May 1st, 2018

Expiry date: Oct 30th, 2018

This letter confirms the completion of inspection and certification for the BAES Laboratory, which is located at House # 23, Southern Street of Habibia High School, Darulaman Road, Kabul, Afghanistan. This laboratory should now be considered as **Certified for a period of 6-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. The following tests (**ASTM D3080, ASTM D4767, ASTM C430, and ASTM D4791**) are **not permitted under this period of Certification**. 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. Samiullah Stanikzai 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 the BAES 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 66 tests, as shown on attached sheets and summarized as:

- Table 1: 13
Table 2: 16
Table 3: 15
Table 4: 15
Table 5: 3
Table 6: 1
Table 7: 3

Regards,

Mowdood Popal

President of Afghanistan Builders Association



BAES Certified Laboratory Tests

Table 1. List of Certified Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D422	Standard Test Method for Particle Size Analysis of Soils
2	ASTM D427	Standard Test Method for Shrinkage Factors of Soils by the Mercury Method
3	ASTM D558	Moisture- Density (Unit Weight) Relation of Soil-Cement Mixtures
4	ASTM D698	Standard Test Method for Compaction Characteristics by Standard Effort
5	ASTM D854	Standard Test Method for Specific Gravity of Soils by Water Pycnometer
6	ASTM D1556	Standard Test Method for Density & Unit Weight of Soils in Place by Sand-Cone Method
7	ASTM D1557	Standard Test Method for Laboratory Compaction Characteristics by Modified Effort
8	ASTM D1883	Standard Test Method for California Bearing Ratio (CBR) of Laboratory Compacted Soil
9	ASTM D2216	Standard Test Method for Laboratory Determination of Water(moisture) Content of Soil and Rock By Mas
10	ASTM D2487	Standard Practice for Classification of Soils for Engineering Purpose (Unified Soil Classification System)
11	ASTM D4318	Standard Test Methods Liquid & Plastic Limits & Plasticity Index
12	ASTM D6951	Standard Test Method for Use of the Dynamic Cone Penetrometer in Shallow Pavement Applications
13	AASHTO T92	Standard Method of Test for Determining the Shrinkage Factors of Soil

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

No	Test Method	Test Procedure Title
1	ASTM C29	Standard Test Method for Unit Weight and Voids in Aggregate
2	ASTM C40	Standard Test Method for Organic Impurities in Fine Aggregates for Concrete
3	ASTM C70	Standard Test Method for Surface Moisture in Fine Aggregate
4	ASTM C88	Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate Method
5	ASTM C117	Standard Test Method for Material Finer than 75 μm (No. 200) Sieve
6	ASTM C127	Standard Test Method for Specific Gravity & Absorption in Coarse Aggregate
	ASTM C128	Standard Test Method for Specific Gravity & Absorption in Fine Aggregate
8	ASTM C535	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
9	ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
10	ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
11	ASTM C566	Standard Test Method for Total Evaporation Moisture Content of Aggregate by Drying

No	Test Method	Test Procedure Title
12	ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
13	ASTM D4944	Standard Test Method for Field Determination of Water (Moisture) Content of Soil by The Calcium Carbide Gas Pressure Tester
14	ASTM D5821	Percentage of Fractured Particles in Coarse Aggregate
15	ASTM C1252	Standard Test Methods for Uncompacted Void Content of Fine Aggregate
16	CRD-C 171	Method for Determination of Aggregate Impact Value (AIV)

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

No	Test Method	Test Procedure Title
1	ASTM C109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in or [50-mm] Cube Specimens)
2	ASTM C184	Fineness of Hydraulic Cement by #100 and # 200 Sieves
3	ASTM C185	Standard Test Method for Air Content of Hydraulic Cement Mortar
4	ASTM C187	Standard Test Method for Amount of Water Required for Normal Consistency of Hydraulic Cement Paste
5	ASTM C188	Standard Test Method for Density of Hydraulic Cement
6	ASTM C191	Standard Test Method for Time Setting of Hydraulic Cement by Vicat Needle
7	ASTM C204	Standard Test Methods for Fineness of Hydraulic Cement by Air-Permeability Apparatus
8	ASTM C359	Standard Test Method for Early Stiffening of Hydraulic Cement (Mortar Method)
9	ASTM C451	Standard Test Method for Early Stiffening of Hydraulic Cement(Paste Method)
10	ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Specimens
11	ASTM C42	Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
12	ASTM C143	Standard Test Method for Slump of Hydraulic- Cement Concrete
13	ASTM C231	Standard Test Methods for Air Content of Freshly Mixed Concrete by the Pressure Method
14	ASTM C805	Standard Test Method for Rebound Number of Hardened Concrete
15	ASTM C67	Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile

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 D70	Standard Test Method for Density of Semi-Solid of Bituminous Materials

No	Test Method	Test Procedure Title
4	ASTM D92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
5	ASTM D113	Standard Test Method for Ductility of bituminous Materials
6	ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity & Density (Rice)
7	ASTM D2172	Standard Test Methods for Quantitative Extraction
8	ASTM D2489	Estimating Degree of Particles Coating of Bituminous- Aggregate Mixtures
9	ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
10	ASTM D 5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
11	ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
12	ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
13	ASTM D1664	Standard Test Method for Coating and Stripping of Bituminous Aggregate Mixtures
14	CRD-C 649	Standard Test Method for Unit Weight, Marshall Stability, and flow of Bituminous Mixtures
15	CRD-C 652	Standard Test Method for Measurement of Reduction in Marshal Stability of Bituminous Paving Mixtures Caused by Immersion in Water

Table 5. List of Certified Masonry Units & Stone Tests

No	Test Method	Test Procedure Title
1	ASTM C140	Standard Test Methods for Sampling and Testing Concrete Masonry and Related Units
2	ASTM C170	Standard Test Method for Compressive Strength of Dimension Stone
3	ASTM C1019	Standard Test Method for Sampling and Testing Grout

Table 6. List of Certified Advance Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D2166	Unconfined Compressive Strength

Table 7. List of Certified Steel Tests

No	Test Method	Test Procedure Title
1	ASTM A370	Test Methods and Definition for Mechanical Testing for Steel Products
2	ASTM E8	Tension Testing of Metallic Materials
3	AASHTO T285	Bend Test of Bars for Concrete Reinforcement