

Laboratory Certification For

Base Consultant and Research Corporation (BCRCo)

Lab ID: LCP-020

Issue date: Aug 16th, 2017

Expiry date: Feb 15th, 2018

This letter confirms the completion of inspection and certification for the BCRCo Laboratory, which is located at 5th Street, Block A, Dispuchery, Kabul, Afghanistan. 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. Ajmal Osmani 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.

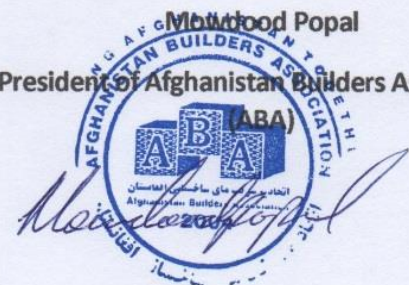
For verification and good standing of this certification please check our online directory of laboratories at http://aba.af/lcp_directory.php. The inspection and certification process for the BCRCo adhered to procedures outlined by the Materials Testing Center (MTC), which is located at the Geotechnical 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:	12
Table 2:	11
Table 3:	17
Table 4:	21
Table 5:	17
Table 6:	4

Regards,

Muhammad Popal
President of Afghanistan Builders Association



BCRCo Certified Laboratory Tests

Table 1. List of Certified Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D 421	Standard Practice for Dry Preparation for Particle Size Distribution & Determination of Soil Constants
2	ASTM D 422	Standard Test Method for Particle Size Analysis of Soils
3	ASTM D 854	Standard Test Method for Specific Gravity of Soils by Water Pycnometer
4	ASTM D 1140	Standard Test Methods for Amount of Material in Soils Finer than No.200 (75- μ m) Sieve
5	ASTM D 1556	Standard Test Method for Density & Unit Weight of Soils in Place by Sand- Cone Method
6	ASTM D 1557	Standard Test Methods for Laboratory Compaction Characteristics by Modified Effort
7	ASTM D 1883	Standard Test Method for California Bearing Ratio (CBR) of Laboratory Compacted Soil
8	ASTM D 2216	Standard Test Method for Laboratory Determination of Water(moisture) Content of Soil and Rock By Mas
9	ASTM D 2487	Standard Practice for Classification of Soils for Engineering Purpose (Unified Soil Classification System)
10	ASTM D 2488	Standard Practice for Description and Identification of Soils (Visual Manual Procedure)
11	ASTM D 3282	Standard Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
12	ASTM D 4959	Standard Test Method for Determination of Water (Moisture) Content of Soil by Direct Heating

Table 2. List of Certified Advance Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D 1452	Practice for Soil Exploration and Sampling by Auger Borings
2	ASTM D 1586	Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils
3	ASTM D 1587	Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes
4	ASTM D 2113	Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation
5	ASTM D 2435	Standard Test Methods for One-Dimensional Consolidation Properties of Soil Using Incremental Loading
6	ASTM D 3080	Standard Test Method for Direct Shear Test of Soil under Consolidated Drained Condition
7	ASTM D 4972	Standard Test Method for pH of Soils
8	ASTM D 5333	Standard Test Method for Measurement of Collapse Potential Soils
9	ASTM D 5434	Standard Guide for Field Logging of Subsurface Exploration of Soil and Rock

No	Test Method	Test Procedure Title
10	ASTM D 6032	Standard Test Method for Determining Rock Quality Designation (RQD) of Rock Core
11	ASTM D 6151	Standard Practice for Using Hollow-Stem Augers for Geotechnical Exploration and Soil Sampling

Table 3. List of Certified Aggregate (Fine and Coarse) Tests

No	Test Method	Test Procedure Title
1	ASTM C 29	Standard Test Method for Unit Weight and Voids in Aggregate
2	ASTM C 40	Standard Test Method for Organic Impurities in Fine Aggregates for Concrete
3	ASTM C 88	Standard Test Method for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate
4	ASTM C 117	Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregate by Washing
5	ASTM C 127	Standard Test Method for Specific Gravity & Absorption in Coarse Aggregate
6	ASTM C 128	Standard Test Method for Specific Gravity & Absorption in Fine Aggregate
7	ASTM C 131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
8	ASTM C 136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregate
9	ASTM C 142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
10	ASTM C 144	Standard Specification for Aggregate for Masonry Mortar
11	ASTM C 404	Standard Specification for Aggregate for Masonry Grout
12	ASTM C 566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying
13	ASTM C 1260	Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
14	ASTM D 2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
15	ASTM D 4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
16	ASTM D 4944	Standard Test Method for Field Determination of Water (Moisture) Content of Soil by The Calcium Carbide Gas Pressure Tester
17	ASTM D 5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate

Table 4. List of Certified Cement, Grout, Mortar, & Concrete Tests

No	Test Method	Test Procedure Title
1	ASTM C 31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
2	ASTM C 39	Standard Test Method for Compressive Strength of Cylindrical

No	Test Method	Test Procedure Title
3	ASTM C 42	Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
4	ASTM C 78	Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
5	ASTM C 109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in or [5-mm] Cube Specimens
6	ASTM C 143	Standard Test Method for Slump of Hydraulic-Cement Concrete
7	ASTM C 150	Specification for Portland Cement
8	ASTM C 187	Standard Test Method for Amount of Water Required for Normal Consistency of Hydraulic Cement Paste
9	ASTM C 188	Standard Test Method for Density of Hydraulic Cement
10	ASTM C 191	Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
11	ASTM C 192	Standard Practice for Making and Curing Test Specimens in Laboratory
12	ASTM C 231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
13	ASTM C 270	Standard Specification for Mortar for Unit Masonry
14	ASTM C 451	Standard Test Method for Early Stiffening of Hydraulic Cement (Paste Method)
15	ASTM C 476	Standard Specification for Grout for Masonry
16	ASTM C 617	Standard Practice for Capping Cylindrical Concrete Specimens
17	ASTM C 926	Standard Specification for Application of Portland Cement-Based Plaster
18	ASTM C 1019	Standard Test Method for Sampling and Testing Grout
19	ASTM C 1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
20	ASTM C 1437	Standard Test Method for Flow of Hydraulic Cement Mortar
21	ASTM C 1602	Standard Specification for Mixing Water Used in the Production of hydraulic Cement Concrete

Table 5. List of Certified Asphalt Cement and Asphalt Concrete Tests

No	Test Method	Test Procedure Title
1	ASTM D 5	Standard Test Method for Penetration of Bituminous Materials
2	ASTM D 36	Standard Test Method for Softening Point
3	ASTM D 70	Standard Test Method for Density of Semi-Solid of Bituminous Materials
4	ASTM D 92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
5	ASTM D 113	Standard Test Method for Ductility of Bituminous Materials
6	ASTM D 242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
7	ASTM D 546	Standard Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
8	ASTM D 979	Standard Practice for Sampling Bituminous Paving Mixtures

No	Test Method	Test Procedure Title
9	ASTM D 1074	Standard Test Method for Compressive Strength of Bituminous Mixtures
10	ASTM D 2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
11	ASTM D 3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
12	ASTM D 3549	Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixtures Specimens
13	ASTM D 3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
14	ASTM D 5361	Standard Practice for Sampling compacted Bituminous Mixtures for Laboratory Testing
15	ASTM D 5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
16	ASTM D 6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
17	ASTM D 6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures

Table 6. List of Certified Bricks & Masonry Units Tests

No	Test Method	Test Procedure Title
1	ASTM C 97	Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone
2	ASTM C 140	Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
3	ASTM C 170	Standard Test Method for Compressive Strength of Dimension Stone
4	ASTM C 1552	Standard Practice for Capping Concrete Masonry Units, Related Units and Masonry Prisms for Compression Testing