

Laboratory Certification For

Karkon Afghan Darwish Construction Material Laboratory Co.

Lab ID: LCP-012

Issue date: March 1st 2018

Expiry date: May 30th, 2018

This letter confirms the completion of inspection and certification for Karkon Afghan Darwish CMT Laboratory, which is located at House # 3, Street # 3 Back side of Rahman Baba College, Adjacent to Mouee Mubarak Mosque, Kota Sangi District 3, Kabul-Afghanistan. This laboratory should now be considered as **Certified for a period of 3-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 C1019, ASTM D113, ASTM C88, ASTM D4643, ASTM D4791, ASTM D1196 ASTM A370, ASTM E8**) are not permitted under this period of Probationary 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. Wali Samimi 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 Karkon Afghan 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 71 tests, as shown on attached sheets and summarized as:

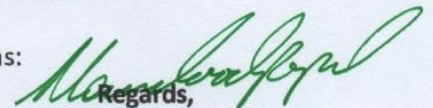
Table 1: 17

Table 2: 3

Table 3: 15

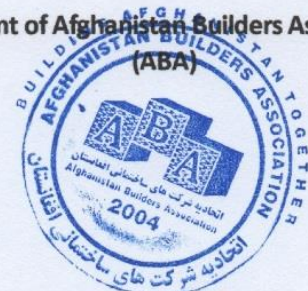
Table 4: 16

Table 5: 20


Regards,

Mowdood Popal

President of Afghanistan Builders Association



KA Certified Laboratory Tests

Table 1. List of Certified Soil Tests

No	Test Method	Test Procedure Title
1	AASHTO T93	Standard Method of Test for Determining the Field Moisture Equivalent of Soils
2	AASHTO T224	Correction for Coarse Particles in the Soil Compaction Test
3	ASTM D421	Dry Preparation for Particle Size Distribution & Soil Constants
4	ASTM D422	Hydro Meter Analysis of Soils
5	ASTM D558	Standard Test Methods for Moisture-Density (Unite Weight) Relations of Soil-Cement Mixtures
6	ASTM D698	Compaction Characteristics by Standard Effort
7	ASTM D854	Specific Gravity of Soils
8	ASTM D1140	Material Finer than 75 mm (No. 200) Sieve
9	ASTM D1556	Density & Unit Weight by Sand Cone
10	ASTM D1557	Compaction Characteristics by Modified Effort
11	ASTM D1883	California Bearing Ratio (CBR)
12	ASTM D2166	Standard Test Method for Unconfined Compressive strength of Cohesive Soil
13	ASTM D2216	Water Content
14	ASTM D2487	Classification of Soils
15	ASTM D4318	Liquid & Plastic Limits & Plasticity Index
16	ASTM D4718	Standard Practice for Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
17	ASTM D6951	Standard Test Method for Use of Dynamic Cone Penetrometer in Shallow Pavement Applications

Table 2. List of Certified Advanced Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D1586	Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils
2	ASTM D2113	Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation
3	ASTM D2435	Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental loading

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

No	Test Method	Test Procedure Title
1	ASTM C29	Unit Weight and Voids in Aggregate
2	ASTM C70	Surface Moisture in Fine Aggregate
3	ASTM C117	Material Finer than 75 μ m (No. 200) Sieve
4	ASTM C127	Specific Gravity & Absorption in Coarse Aggregate

No	Test Method	Test Procedure Title
5	ASTM C128	Specific Gravity & Absorption in Fine Aggregate
6	ASTM C131	Los Angeles Abrasion Resistance on Small-Size Coarse Aggregate
7	ASTM C136	Sieve Analysis of Aggregates
8	ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
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 C566	Total Moisture Content
11	ASTM D75	Standard Practice for Sampling Aggregate
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	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
15	CRD-C171	Standard Test Method for Determining Percentage of Crushed Particles in Aggregate

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

No	Test Method	Test Procedure Title
1	ASTM C31	Standard Practice for Making and Curing Test Specimens in the field
2	ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Specimens
3	ASTM C42	Standard Test Method for Obtaining and Testing Drilled Cores and Sewed Beams of Concrete
4	ASTM C109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars
5	ASTM C138	Standard Test Method for Density (Unite Weight), Yield, and Air Content (Gravimetric) of Concrete
6	ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
7	ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
8	ASTM C174	Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores
9	ASTM C187	Standard Test Method for Amount of Water Required for Normal Consistency of Hydraulic Cement Paste
10	ASCTM C188	Standard Test Method for Density of Hydraulic Cement
11	ASCTM C191	Standard Test Method for Time Setting of Hydraulic Cement by Vicat Needle
12	ASTM C192	Making and Curing Test Specimens in Laboratory
13	ASTM C231	Standard Test Methods for Air Content of Freshly Mixed Concrete by the Pressure Method
14	ASTM C511	Moist Cabinets, Moist Rooms, Water Storage Tanks
15	ASTM C617	Capping Cylindrical Specimens
16	ASTM C1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete

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

No	Test Method	Test Procedure Title
1	AASHTO T79	Standard Method of Test for Flash Point with Tag Open-Cup Apparatus for Use with Material Having a Flash Point Less Than 93 °C (200 °F)
2	AASHTO T230	Standard Method of Test for Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures
3	ASTM D5	Standard Test Method for Penetration of Bituminous Materials
4	ASTM D36	Standard Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
5	ASTM D70	Standard Test Method for Density of Semi-Solid Bituminous Materials (Pycnometer Method)
6	ASTM D92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
7	ASTM D546	Standard Test Method Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
8	ASTM D979	Standard Practice for Sampling Bituminous Paving Mixtures
9	ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity & Density of Bituminous Paving Mixtures
10	ASTM D2042	Standard Test Method for Solubility of Asphalt Materials in Trichloroethylene
11	ASTM D2726	Bulk Specific Gravity and Density
12	ASTM D3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
13	ASTM D3549	Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixtures Specimens
14	ASTM D5361	Standard Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing
15	ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
16	ASTM D6926	Standard Practice for Preparation of Bituminous Specimens using Marshall Apparatus
17	ASTM D6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
18	CRD-C649	Standard Test Method for Unit Weight, Marshal Stability, and Flow of Bituminous Mixtures
19	CRD-C650	Standard Method for Density and Percent Voids of Compacted Bituminous Paving Mixtures
20	CRD-C652	Standard Test Method for Measurement of Reduction in Marshall Stability of Bituminous Mixtures Caused by Immersion in Water