

Laboratory Certification For

Reno Geotech & Construction Material Testing Company

Lab ID: LCP-011

Issue date: June 10<sup>th</sup>, 2018

Expiry date: Dec 9<sup>th</sup>, 2018

This letter confirms the completion of inspection and certification for Reno Geotech & Construction Materials Testing Lab, which is located at House# 15, street #6, Shama Square, Khoshal Khan, 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 7, as attached to this letter. The following tests (**ASTM D3080, ASTM D4791, and ASTM C1019**) 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. Asadullah Salih Laboratory Manager;
- B. If the calibration certificates of equipments 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](http://aba.af/lcp_directory.php). The inspection and certification process for the Reno 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 95 tests, as shown on attached sheets and summarized as:

Table 1: 19

Table 2: 4

Table 3: 19

Table 4: 25

Table 5: 19

Table 6: 7

Table 7: 2

Regards

Mowdood Popal

President of Afghanistan Builders Association

(ABA)





**Reno Geotech & Construction Material Testing Company Certified Laboratory Tests**

**Table 1. List of Soil Tests**

No	Test Method	Test Procedure Title
1	ASTM C421	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
3	ASTM D 698	Compaction Characteristics by Standard Effort
4	ASTM D854	Standard Test Method for Specific Gravity of Soil by Water Pycnometer
5	ASTM D1140	Material Finer than 75 mm (No. 200) Sieve
6	ASTM D1556	Density & Unit Weight by Sand Cone
7	ASTM D1557	Compaction Characteristics by Modified Effort
8	ASTM D1883	California Bearing Ratio (CBR)
9	ASTM D2166	Standard Test Method for Unconfined Compressive Strength of Cohesive Soils
10	ASTM D2216	Standard Test Methods for Laboratory Determination of Water Content of Soil and Rock by Mass
11	ASTM D2487	Standard Practice for Classification of Soils for Engineering Purpose
12	ASTM D2488	Standard Practice for Description of and Identification of Soils (Visual-Manual Procedure)
13	ASTM D3282	Standard Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purpose
14	ASTM D4220	Standard Practices for Preserving and Transporting Soil Samples
15	ASTM D4318	Liquid & Plastic Limits & Plasticity Index
16	ASTM D4643	Determination of Water Content of Soil by Microwave Oven
17	ASTM D4718	Standard Practice for Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
18	ASTM D6951	Standard Test Method for Use of the Dynamic Cone Penetrometer in Shallow Pavement Applications
19	AASHTO T224	Correction for Coarse Particles in the Soil Compaction Test

**Table 2. List of Advanced Soil Tests**

No	Test Method	Test Procedure Title
1	ASTM D1196	Non repetitive Static Plate Load Tests of Soils and Flexible Pavement Components, for Use in Evaluation and Design of Airport and Highway Pavements
2	ASTM D2113	Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation
3	ASTM D1586	Penetration Test and Split-Barrel Sampling of Soils

No	Test Method	Test Procedure Title
4	ASTM D2435	Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading

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

No	Test Method	Test Procedure Title
1	ASTM C29	Standard Test Method for Bulk Density (Unit Weight) and Voids in Aggregate
2	ASTM C70	Standard Test Method for Surface Moisture in Fine Aggregate by Oven
3	ATSM C88	Standard Test Method for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate
4	ASTM C117	Standard Test Method for Material Finer than 75 $\mu\text{m}$ (No. 200) Sieve in Mineral Aggregate by Washing
5	ASTM C127	Standard Test Method for Relative Density (Specific Gravity )& Absorption in Coarse Aggregate
6	ASTM C128	Standard Test Method for Relative Density (Specific Gravity )& Absorption in Fine Aggregate
7	ASTM C131	Los Angeles Abrasion Resistance on Small-Size Coarse Aggregate
8	ASTM C136	Sieve Analysis of Fine Aggregate and Fineness Modulus
9	ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregate
10	ASTM C144	Standard Specification for Aggregate for Masonry Mortar
11	ASTM C404	Standard Specification for Aggregate for Masonry Grout
12	ASTM C535	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
13	ASTM C566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Sieve and Oven
14	ASTM C897	Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plaster Mix Design
15	ASTM D75	Standard Practice for Sampling Aggregate
16	ASTM D1241	Standard Specification for Materials for Soil-Aggregate Subbase, Base, and Surface Courses
17	ASTM D2419	Standard Test Method for Sand Equivalent Value of soil and Fine Aggregate
18	ASTM D4944	Standard Test Method for Field Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Tester
19	ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate

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

No	Test Method	Test Procedure Title
1	ASTM C31	Making and Curing Test Specimens in the Field
2	ASTM C39	Compressive Strength of Cylindrical Specimens
3	ASTM C42	Obtaining and Testing Drilled Cores and Sewed Beams of Concrete
4	ASTM C109	Compressive Strength of Hydraulic Cement Mortars
5	ASTM C143	Slump of Hydraulic –Cement Concrete
6	ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
7	ASTM C174	Measuring Thickness of Concrete Elements Using Drilled Concrete Cores
8	ASTM C185	Standard Test Method for Air Content of Hydraulic Cement Mortar
9	ASCTM 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 C270 REV A	Standard Specification for Mortar for Unit Masonry
15	ASTM C293	Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Center Point Load)
16	ASTM C451	Standard Test Method for Early Stiffening of Hydraulic Cement ( Paste Method)
17	ASTM C140	Block Compression Test (CMU)
18	ASTM C476	Standard Specification for Grout of Masonry
19	ASTM C617	Standard Practice for Capping Cylindrical Specimens
20	ASTM C642	Density, Absorption and Voids in Hardened Concrete
21	ASTM C778	Standard Specification for Standard Sand
22	ASTM C805	Standard Test Method for Rebound Number of Hardened Concrete
23	ASTM C926 REV A	Standard Specification for Application of Portland Cement – Based Plaster
24	ASTM C1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
25	ASTM C1437	Standard Test Method for Flow of Hydraulic Cement Mortar

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

No	Test Method	Test Procedure Title
1	AASHTO T182	Coating and Stripping of Bitumen-Aggregate Mixtures
2	ASTM D5	Standard Test Method for Penetration of Bituminous Materials
3	ASTM D36	Standard Test Method for Softening Point of Bitumen (Ring-and Ball Apparatus)
4	ASTM D70	Standard Test Method for Density of Semi-Solid Bituminous Materials (Pycnometer Method)
5	ASTM D92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
6	ASTM D140	Sampling Bituminous Materials
7	ASTM D242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
8	ASTM D546	Standard Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
9	ASTM D979	Sampling Bituminous Paving Mixtures
10	ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
11	ASTM D2172	Standard Test Method for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
12	ASTM D2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
13	ASTM D3549	Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens
14	ASTM D3665	Standard Practice for Random Sampling of Construction Materials
15	ASTM D113	Ductility of Bitumen
16	ASTM D5361	Standard Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing
17	ASTM D5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
18	ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
19	ASTM D6927	Standard Test Method Marshall Stability and Flow of Bituminous Mixtures

**Table 6. List of Bricks, Stone, & CMU's Tests**

No	Test Method	Test Procedure Title
1	ASTM C62	Standard Specification for Building Brick (Solid Masonry Unit Made From Clay or Shale)
2	ASTM C67	Sampling and Testing Brick and Structural Clay Tile
3	ASTM C90	Standard Specification for loadbearing Concrete Masonry Unit
4	ASTM C97	Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone
5	ASTM C140	Sampling and Testing Concrete Masonry and Related Units
6	ASTM C170	Compressive Strength of Dimension Stone
7	ASTM C1552	Capping CMU/Related Units/Masonry Prisms for Compression Testing

**Table 7. List of Steel Tests**

No	Test Method	Test Procedure Title
1	AASHTO T285	Standard Method of Test for Bend Test for Bars for Concrete Reinforcement
2	ASTM A370	Standard Test Methods and Definitions for Mechanical Testing of Steel Products (Bend)