

Laboratory Certification For

Reno Geotech & Construction Material Testing Company

Lab ID: LCP-011

Issue date: June 10th, 2017

Expiry date: June 9th, 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 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. 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. Shaid Jamal the 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. 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 104 tests, as shown on attached sheets and summarized as:

Table 1: 20

Table 2: 4

Table 3: 21

Table 4: 27

Table 5: 20

Table 6: 8

Table 7: 4

Regards,

Naeem Yassin

President of Afghanistan Builders Association



Reno Geotech & Construction Material Testing Company Certified Laboratory Tests

Table 1. List of Soil Tests

No	Test Method	Test Procedure Title
1	ASTM C 421	Standard Practice for Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants
2	ASTM D 422	Standard Test Method for Particle Size Analysis
3	ASTM D 698	Compaction Characteristics by Standard Effort
4	ASTM D 854	Standard Test Method for Specific Gravity of Soil by Water Pycnometer
5	ASTM D 1140	Material Finer than 75 mm (No. 200) Sieve
6	ASTM D 1556	Density & Unit Weight by Sand Cone
7	ASTM D 1557	Compaction Characteristics by Modified Effort
8	ASTM D 1883	California Bearing Ratio (CBR)
9	ASTM D 2166	Standard Test Method for Unconfined Compressive Strength of Cohesive Soils
10	ASTM D 2216	Standard Test Methods for Laboratory Determination of Water Content of Soil and Rock by Mass
11	ASTM D 2487	Standard Practice for Classification of Soils for Engineering Purpose
12	ASTM D 2488	Standard Practice for Description of and Identification of Soils (Visual-Manual Procedure)
13	ASTM D 3282	Standard Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purpose
14	ASTM D 4220	Standard Practices for Preserving and Transporting Soil Samples
15	ASTM D 4318	Liquid & Plastic Limits & Plasticity Index
16	ASTM D 4643	Determination of Water Content of Soil by Microwave Oven
17	ASTM D 4718	Standard Practice for Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
18	ASTM D 6951	Standard Test Method for Use of the Dynamic Cone Penetrometer in Shallow Pavement Applications
19	AASHTO T 224	Correction for Coarse Particles in the Soil Compaction Test
20	BS 6297	Percolation test

Table 2. List of Advanced Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D 1196	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 D 2113	Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation

No	Test Method	Test Procedure Title
3	ASTM D 1586	Penetration Test and Split-Barrel Sampling of Soils
4	ASTM D 2435	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 C 29	Standard Test Method for Bulk Density (Unit Weight) and Voids in Aggregate
2	ASTM C 70	Standard Test Method for Surface Moisture in Fine Aggregate by Oven
3	ATSM 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 Material Finer than 75 μm (No. 200) Sieve in Mineral Aggregate by Washing
5	ASTM C 127	Standard Test Method for Relative Density (Specific Gravity) & Absorption in Coarse Aggregate
6	ASTM C 128	Standard Test Method for Relative Density (Specific Gravity) & Absorption in Fine Aggregate
7	ASTM C 131	Los Angeles Abrasion Resistance on Small-Size Coarse Aggregate
8	ASTM C 136	Sieve Analysis of Fine Aggregate and Fineness Modulus
9	ASTM C 142	Standard Test Method for Clay Lumps and Friable Particles in Aggregate
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 535	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
13	ASTM C 566	Standard Test Method for Total Evaporable Moisture Content of Aggregate by Sieve and Oven
14	ASTM C 897	Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plaster Mix Design
15	ASTM D 75	Standard Practice for Sampling Aggregate
16	ASTM D 1241	Standard Specification for Materials for Soil-Aggregate Subbase, Base, and Surface Courses
17	ASTM D 2419	Standard Test Method for Sand Equivalent Value of soil and Fine Aggregate
18	ASTM D 4791	Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
19	ASTM D 4944	Standard Test Method for Field Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Tester
20	ASTM D 5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
21	BS 812 Section 105.1	Testing aggregate- Part 105: Methods for determination of particle shape Section 105.1 Flakiness Index

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

No	Test Method	Test Procedure Title
1	ACI 211.1	Concrete Mix Design
2	ASTM C 31	Making and Curing Test Specimens in the Field
3	ASTM C 39	Compressive Strength of Cylindrical Specimens
4	ASTM C 42	Obtaining and Testing Drilled Cores and Sewed Beams of Concrete
5	ASTM C 109	Compressive Strength of Hydraulic Cement Mortars
6	ASTM C 143	Slump of Hydraulic –Cement Concrete
7	ASTM C 172	Standard Practice for Sampling Freshly Mixed Concrete
8	ASTM C 174	Measuring Thickness of Concrete Elements Using Drilled Concrete Cores
9	ASTM C 185	Standard Test Method for Air Content of Hydraulic Cement Mortar
10	ASCTM C 187	Standard Test Method for Amount of Water Required for Normal Consistency of Hydraulic Cement Paste
11	ASCTM C 188	Standard Test Method for Density of Hydraulic Cement
12	ASCTM C 191	Standard Test Method for Time Setting of Hydraulic Cement by Vicat Needle
13	ASTM C 192	Making and Curing Test Specimens in Laboratory
14	ASTM C 231	Standard Test Methods for Air Content of Freshly Mixed Concrete by the Pressure Method
15	ASTM C 270 REV A	Standard Specification for Mortar for Unit Masonry
16	ASTM C 293	Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Center Point Load)
17	ASTM C 451	Standard Test Method for Early Stiffening of Hydraulic Cement (Paste Method)
18	ASTM C 140	Block Compression Test (CMU)
19	ASTM C 476	Standard Specification for Grout of Masonry
20	ASTM C 617	Standard Practice for Capping Cylindrical Specimens
21	ASTM C 642	Density, Absorption and Voids in Hardened Concrete
22	ASTM C 778	Standard Specification for Standard Sand
23	ASTM C 805	Standard Test Method for Rebound Number of Hardened Concrete
24	ASTM C 926 REV A	Standard Specification for Application of Portland Cement – Based Plaster
25	ASTM C 1019	Standard Test Method for Sampling and Testing Grout
26	ASTM C 1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
27	ASTM C 1437	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	MS- 2	Asphalt Mix Design
2	AASHTO T 182	Coating and Stripping of Bitumen-Aggregate Mixtures
3	ASTM D 5	Standard Test Method for Penetration of Bituminous Materials
4	ASTM D 36	Standard Test Method for Softening Point of Bitumen (Ring-and Ball Apparatus)
5	ASTM D 70	Standard Test Method for Density of Semi-Solid Bituminous Materials (Pycnometer Method)
6	ASTM D 92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
7	ASTM D 140	Sampling Bituminous Materials
8	ASTM D 242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
9	ASTM D 546	Standard Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
10	ASTM D 979	Sampling Bituminous Paving Mixtures
11	ASTM D 2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
12	ASTM D 2172	Standard Test Method for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
13	ASTM D 2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
14	ASTM D 3549	Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens
15	ASTM D 3665	Standard Practice for Random Sampling of Construction Materials
16	ASTM D 113	Ductility of Bitumen
17	ASTM D 5361	Standard Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing
18	ASTM D 5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
19	ASTM D 6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
20	ASTM D 6927	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 C 62	Standard Specification for Building Brick (Solid Masonry Unit Made From Clay or Shale)
2	ASTM C 67	Sampling and Testing Brick and Structural Clay Tile
3	ASTM C 90	Standard Specification for loadbearing Concrete Masonry Unit
4	ASTM C 97	Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone
5	ASTM C 140	Sampling and Testing Concrete Masonry and Related Units
6	ASTM C 170	Compressive Strength of Dimension Stone
7	ASTM C 1019	Compressive Strength of Grout for Masonry
8	ASTM C 1552	Capping CMU/Related Units/Masonry Prisms for Compression Testing

Table 7. List of Steel Tests

No	Test Method	Test Procedure Title
1	AASHTO T 285	Standard Method of Test for Bend Test for Bars for Concrete Reinforcement
2	ASTM A 370	Standard Test Methods and Definitions for Mechanical Testing of Steel Products (Bend & Tensile)
3	ASTM A 615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
4	ASTM E 8	Standard Test Methods for Tension Testing of Metallic Materials