

## Laboratory Certification For

### National Engineering Services for Rehabilitation of Afghanistan (NESRA)

Lab ID: LCP-004

Issue date: Feb 15<sup>th</sup>, 2018

Expiry date: Aug 14<sup>th</sup>, 2018

This extension letter confirms an additional 6-month certification for NESRA Lab, which is located at House# 105, Street # 12, Behind Cheragh Hospital, Salim Karwan Square, Qala-e-Fatullah, 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. 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. M. Hashim Malikzai 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](http://aba.af/lcp_directory.php). The inspection and certification process for the NESRA 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 137 tests, as shown on attached sheets and summarized as:

Table 1:	29
Table 2:	11
Table 3:	27
Table 4:	32
Table 5:	26
Table 6:	8
Table 7:	4

Regards,

Mowdood Popal

President of Afghanistan Builders Association  
(ABA)





### NESRA Certified Laboratory Tests

**Table 1. List of Certified Soil Tests**

No	Test Method	Test Procedure Title
1	AASHTO T89	Standard Method of Test for Determining the Liquid Limit of Soils
2	AASHTO T90	Standard Method of Test for Determining the Plastic Limit and Plasticity Index of Soils
3	AASHTO T9	Standard Specification for Determining the Field Moisture Equivalent of Soils
4	AASHTO T224	Standard Method of Test for Correction for Coarse Particles in the Soil Compaction Test
5	ASTM C136	Particle Analysis of Soils
6	ASTM D421	Standard Practice for Dry Preparation for Particle Size Distribution & Soil Constants
7	ASTM D422	Standard Test Method for Particle Size Analysis of Soils (Hydrometer not available)
8	ASTM D558	Moisture- Density (Unit Weight) Relation of Soil-Cement Mixtures
9	ASTM D698	Standard Test Method for Compaction Characteristics by Standard Effort
10	ASTM D854	Standard Test Method for Specific Gravity of Soils by Water Pycnometer
11	ASTM D1140	Standard Test Method for Amount of Material in Soils Finer than 75 mm (No. 200) Sieve
12	ASTM D1556	Standard Test Method for Density & Unit Weight of Soils in Place by Sand-Cone Method
13	ASTM D1557	Standard Test Method for Laboratory Compaction Characteristics by Modified Effort
14	ASTM D1883	Standard Test Method for California Bearing Ratio (CBR) of Laboratory Compacted Soil
15	ASTM D2166	Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
16	ASTM D2216	Standard Test Method for Laboratory Determination of Water(moisture) Content of Soil and Rock By Mas
17	ASTM D2487	Standard Practice for Classification of Soils for Engineering Purpose (Unified Soil Classification System)
18	ASTM D2488	Standard Practice for Description & Identification of Soils (Visual-Manual Procedure)
19	ASTM D3282	Standard Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purpose
20	ASTM D4220	Standard Practice for Preserving and Transporting Soil Samples
21	ASTM D4318	Standard Test Methods Liquid & Plastic Limits & Plasticity Index
22	ASTM D4643	Lab Determination of Water (Moisture) Content of Soil by Microwave oven heating
23	ASTM D4718	Standard Practice for Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
24	ASTM D4959	Standard Test Method for Determination of Water (Moisture) Content of Soil by Direct Heating
25	ASTM D6026	Practice for Using Significant Digits in Geotechnical Data
26	ASTM D6913	Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis

No	Test Method	Test Procedure Title
27	ASTM D6951	Standard Test Method for Use of the Dynamic Cone Penetrometer in Shallow Pavement Applications
28	ASTM E11	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
29	CRD-C 654	Standard Test Method for Determining the California Bearing Ratio of Soil

**Table 2. List of Certified Advance Soil Tests**

No	Test Method	Test Procedure Title
1	ASTM D1196	Standard Test Method for Nonrepetitive Repetitive Static Plate Load Tests of Soils and Flexible Pavement Components for Use in Evaluation and Design of Airport and Highway Pavements
2	ASTM D1452	Practice for Soil Exploration and Sampling by Auger Borings
3	ASTM D1586	Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils
4	ASTM D1587	Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes
5	ASTM D2113	Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation
6	ASTM D2435	Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading
7	ASTM D3080	Standard Test Method for Direct Shear Test of Soil under consolidated Drained Condition
8	ASTM D5434	Standard Guide for Field Logging of Subsurface Exploration of Soil and Rock
9	ASTM D6032	Standard Test Method for Determining Rock Quality Designation (RQD) of Rock Core
10	ASTM D6951	Standard Test Method for used Dynamic Cone Penetration for Shallow Pavement Application
11	ASTM D5731	Standard Test Method for Determining Point Load Test

**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 70	Standard Test Method for Surface Moisture in Fine Aggregate
4	ASTM C 88	Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate Method
5	ASTM C 117	Standard Test Method for Material Finer than 75 $\mu$ m (No. 200) Sieve
6	ASTM C 123	Standard Test Method for Lightweight Particles in Aggregate
7	ASTM C 125	Standard Terminology Relating to Concrete and Concrete Aggregates
8	ASTM C 127	Standard Test Method for Specific Gravity & Absorption in Coarse Aggregate
9	ASTM C 128	Standard Test Method for Specific Gravity & Absorption in Fine Aggregate
10	ASTM C 131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine

No	Test Method	Test Procedure Title
11	ASTM C 136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
12	ASTM C 142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
13	ASTM C 144	Standard Specification for Aggregate for Masonry Mortar
14	ASTM C 404	Standard Specification for Aggregate for Masonry Grout
15	ASTM C 535	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
16	ASTM C 566	Standard Test Method for Total Evaporation Moisture Content of Aggregate by Drying
17	ASTM C 702	Standard Practice for Reducing Samples to Testing Size
18	ASTM C 897	Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters
19	ASTM C 1252	Standard Test Methods for Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading)
20	ASTM D 75	Standard Practice for Sampling Aggregate
21	ASTM D 1241	Standard Specification for Materials for Soil-Aggregate Subbase, Base, and Surface Courses
22	ASTM D 2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
23	ASTM D 4791	Standard Test Method for Flat Particles, Elongated Particles, Flat and Elongated Particles in Coarse Aggregate
24	ASTM D 4944	Standard Test Method for Field Determination of Water (Moisture) Content of Soil by The Calcium Carbide Gas Pressure Tester
25	ASTM D 5079	Standard Practice for Preserving and Transporting Rock Core Samples
26	ASTM D 5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
27	CRD-C 171	Standard Test Method for Determining the Percentage of Crushed Particles in 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 Specimens in the Field
2	ASTM C 39	Standard Test Method for Compressive Strength of Cylindrical
3	ASTM C 42	Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
4	ASTM C 109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in or [50-mm] Cube Specimens)
5	ASTM C 138	Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
6	ASTM C 143	Standard Test Method for Slump of Hydraulic-Cement Concrete
7	ASTM C 150	Specification for Portland Cement
8	ASTM C 151	Standard Test Method for Autoclave Expansion of Hydraulic Cement
9	ASTM C 172	Standard Practice for Sampling Freshly Mixed Concrete
10	ASTM C 174	Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores
11	ASCTM C 185	Standard Test Method for Air Content of Hydraulic Cement Mortar

No	Test Method	Test Procedure Title
12	ASCTM C 187	Standard Test Method for Amount of Water Required for Normal Consistency of Hydraulic Cement Paste
13	ASCTM C 191	Standard Test Method for Time Setting of Hydraulic Cement by Vicat Needle
14	ASTM C 192	Standard Practice for Making and Curing Test Specimens in Laboratory
15	ASTM C 231	Standard Test Methods for Air Content of Freshly Mixed Concrete by the Pressure Method
16	ASTM C 270	Standard Specification for Mortar for Unit Masonry
17	ASTM C 430	Standard Test Methods for Fineness of Hydraulic Cement by Sieve No .325
18	ASTM C 451	Standard Test Method for Early Stiffening of Hydraulic Cement( Paste Method)
19	ASTM C 470	Standard Specification for Molds for Forming Concrete Test Cylinders Vertically
20	ASTM C 476	Standard Specification for Grout for Masonry
21	ASTM C 511	Standard Specification for Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes
22	ASTM C 617	Standard Practice for Capping Cylindrical Specimens
23	ASTM C 642	Test Method for Specific Gravity , Absorption and Voids in Hardened Concrete
24	ASTM C 805	Standard Test Method for Rebound Number of Hardened Concrete
25	ASTM C 823	Standard Practice for Examination and Sampling of Hardened Concrete in Construction
26	ASTM C 926	Standard Specification for Application of Portland Cement –Based Plaster
27	ASTM C 1019	Standard Test Method for Sampling and Testing Grout
28	ASTM C 1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
29	ASTM C 1180	Standard Terminology of Mortar and Grout for Unit Masonry
30	ASTM C 1314	Standard Test Method for Compressive Strength of Masonry Prisms
31	ASTM C 1231	Standard Practice for Use of Unbonded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders
32	ASMT C 1437	Standard Test Method for Flow of Hydraulic Cement Mortar

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

No	Test Method	Test Procedure Title
1	AASHTO T 79	Standard Method of Tests for Flash Point with Tag Open-Cup Apparatus for Use with Material Having a Flash Point Less than 93°C (200 °F)
2	AASHTO T 182	Standard Method of Test for Coating and Stripping of Bitumen-Aggregate Mixtures
3	AASHTO T 230	Standard Method of Tests for Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures
4	ASTM D 5	Standard Test Method for Penetration of Bituminous Materials
5	ASTM D 36	Standard Test Method for Softening Point
6	ASTM D 70	Standard Test Method for Density of Semi-Solid of Bituminous Materials
7	ASTM D 92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester

No	Test Method	Test Procedure Title
8	ASTM D 113	Standard Test Method for Ductility of bituminous Materials
9	ASTM D 140	Standard Practice for Sampling Bituminous Materials
10	ASTM D 242	Standard Specification for Mineral Filler for Bituminous Paving Mixtures
11	ASTM D 546	Standard Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
12	ASTM D 979	Standard Practice for Sampling Bituminous Paving Mixtures
13	ASTM D 2041	Standard Test Method for Theoretical Maximum Specific Gravity & Density (Rice)
14	ASTM D 2172	Standard Test Methods for Quantitative Extraction
15	ASTM D 2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
16	ASTM D 3203	Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
17	ASTM D 3549	Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixtures Specimens
18	ASTM D 3665	Standard Practice for Random Sampling of Construction Materials
19	ASTM D 3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
20	ASTM D 5361	Standard Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing
21	ASTM D 5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
22	ASTM D 6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
23	ASTM D 6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
24	CRD-C 649	Standard Test Method for Unit Weight, Marshall Stability, and flow of Bituminous Mixtures
25	CRD-C 650	Standard Method for Density and Percent Voids of Compacted Bituminous Paving Mixtures
26	CRD-C 652	Standard Test Method for Measurement of Reduction in Marshal Stability of Bituminous Paving Mixtures Caused by Immersion in Water

**Table 6. List of Certified Bricks & Masonry Units Tests**

No	Test Method	Test Procedure Title
1	ASTM C 62	Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)
2	ASTM C 67	Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile
3	ASTM C 90	Standard Specification for Loadbearing Concrete Masonry Units
4	ASTM C 97	Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone
5	ASTM C 140	Standard Test Methods for Sampling and Testing Concrete Masonry and Related Units
6	ASTM C 170	Standard Test Method for Compressive Strength of Dimension Stone
7	ASTM C 1532	Practice for Selection, Removal, and Shipment of Manufactured Masonry Units and Masonry Specimens from Existing Construction

No	Test Method	Test Procedure Title
8	ASTM C 1552	Standard Practice for Capping CMU/Related Units/Masonry Prisms for Compression Testing

Table 7. List of Certified Steel Tests for NESRA

No	Test Method	Test Procedure Title
1	AASHTO T 285	Standard Method of Tests for Bend Test of Bars for Concrete Reinforcement
2	ASTM A 370	Standard Test Methods and Definition for Mechanical Testing for Steel Products
3	ASTM A 615	Standard Specification for Deformed and Plain Carbon- Steel Bars for Concrete Reinforcement
4	ASTM E 0008	Standard Test Methods for Tension Testing of Metallic Materials