

Laboratory Certification For
STRATA Engineering Services

Lab ID: LCP-013

Issue date: Aug 16th, 2017

Expiry date: Feb 15th, 2018

This letter confirms the completion of inspection and certification for the STRATA Lab, which is located at House # 5, Khushal Khan Mina, Opposite to Cello, District 5, 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. Eng. Nisar Ahmad Ahmadi 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 STRATA 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 70 tests, as shown on attached sheets and summarized as:

Table 1: 10

Table 2: 19

Table 3: 21

Table 4: 15

Table 5: 3

Table 6: 2

Regards,

Mowdood Popal

President of Afghanistan Builders Association



STRATA Certified Laboratory Tests

Table 1. List of Certified Soil Tests

| No | Test Method | Test Procedure Title |
|----|--------------|--|
| 1 | ASTM D 422 | Standard Test Method for Particle-Size Analysis of Soils (Hydro Meter now available) |
| 2 | ASTM D 698 | Standard Test Method for Compaction Characteristics by Standard Effort |
| 3 | ASTM D 854 | Standard Test Method for Specific Gravity of Soils by Water Pycnometer |
| 4 | ASTM D 1140 | Standard Test Method for Amount of Material in Soils Finer than 75 mm (No. 200) 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 Method for Laboratory Compaction Characteristics by Modified Effort |
| 7 | ASTM D 2216 | Standard Test Method for Laboratory Determination of Water Content of Soil and Rock By Mass |
| 8 | ASTM D 2487 | Standard Practice for Classification of Soils for Engineering Purpose (Unified Soil Classification System) |
| 9 | ASTM D 6026 | Practice for Using Significant Digits in Geotechnical Data |
| 10 | ASTM D 6913 | Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis |

Table 2. List of Certified 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 |
| 3 | ASTM C 88 | Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate |
| 4 | ASTM C 117 | Standard Test Method for Material Finer than 75 μ m (No. 200) Sieve |
| 5 | ASTM C 127 | Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption in Coarse Aggregate |
| 6 | ASTM C 128 | Standard Test Method for Density, Relative Density (Specific Gravity), and 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 Aggregates |
| 9 | ASTM C 142 | Standard Test Method for Clay Lumps and Friable Particles in Aggregates |
| 10 | ASTM C 404 | Standard Specification for Aggregate for Masonry Grout |
| 11 | ASTM C 566 | Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying |
| 12 | ASTM C 702 | Standard Practice for Reducing Samples of Aggregate to Testing Size |
| 13 | ASTM C 897 | Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters |

| No | Test Method | Test Procedure Title |
|----|-------------|---|
| 14 | ASTM D 75 | Standard Practice for Sampling Aggregate |
| 15 | ASTM D 1241 | Standard Specification for Materials for Soil-Aggregate Subbase, Base, and Surface Courses |
| 16 | ASTM D 2419 | Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate |
| 17 | ASTM D 4791 | Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate |
| 18 | ASTM D 5821 | Standard Test Method for Determining Percentage of Fractured Particles in Coarse Aggregate |
| 19 | CRD-C 171 | Standard Test Method for Determining Percentage of Crushed Particles in Aggregate |

Table 3. List of Certified Cement, Grout, Mortar, & Concrete Tests

| No | Test Method | Test Procedure Title |
|----|-------------|---|
| 1 | ASTM C 31 | Standard Practice for Making and Curing Test Specimens in the Field |
| 2 | ASTM C 39 | Standard Test Method for Compressive Strength of Cylindrical Specimens |
| 3 | ASTM C 42 | Standard Test Method for Obtaining and Testing Drilled Cores and Sewed Beams of Concrete |
| 4 | ASTM C 109 | Standard Test Method for Compressive Strength of Hydraulic Cement Mortars |
| 5 | ASTM C 143 | Standard Test Method for Slump of Hydraulic-Cement Concrete |
| 6 | ASTM C 172 | Standard Practice for Sampling Freshly Mixed Concrete |
| 7 | ASTM C 174 | Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores |
| 8 | ASTM C 185 | Standard Test Method for Air Content of Hydraulic Cement Mortar |
| 9 | ASCTM C 187 | Standard Test Method for Amount of Water Required for Normal Consistency of Hydraulic Cement paste |
| 10 | ASCTM C 192 | Standard Practice for Making and Curing Concrete Test Specimens |
| 11 | ASTM C 231 | Standard Test Method for Air Content of Freshly Mixed Concrete by Pressure Method |
| 12 | ASTM C 270 | Standard Specification for Mortar for Unit Masonry |
| 13 | ASTM C 470 | Standard Specification for Molds for Forming Concrete Test Cylinders Vertically |
| 14 | ASTM C 476 | Standard Specification for Grout for Masonry |
| 15 | ASTM C 511 | Standard Specification for Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in Testing Hydraulic Cement and Concrete |
| 16 | ASTM C 617 | Standard Practice for Capping Cylindrical Concrete Specimens |
| 17 | ASTM C 642 | Standard Test Method for Density, Absorption, and Voids in Hardened Concrete |
| 18 | ASTM C 778 | Standard Specification for Standard Sand |
| 19 | ASTM C 805 | Standard Test Method for Rebound Number of Hardened Concrete |
| 20 | ASTM C 1019 | Standard Test Method for Sampling and Testing Grout |

| No | Test Method | Test Procedure Title |
|----|-------------|---|
| 21 | ASTM C 1064 | Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete |

Table 4. 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 of Bitumen (Ring-and-Ball Apparatus) |
| 3 | ASTM D 70 | Standard Test Method for Density of Semi-Solid Bituminous Materials |
| 4 | ASTM D 113 | Standard Test Method for Ductility of Bituminous Materials |
| 5 | ASTM D 140 | Standard Practice for Sampling 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 |
| 9 | ASTM D 2172 | Standard Test Method for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures |
| 10 | ASTM D 2726 | Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Paving Mixtures |
| 11 | ASTM D 3203 | Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures |
| 12 | ASTM D 3665 | Standard Practice for Random Sampling of Construction Materials |
| 13 | ASTM D 3666 | Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Mixtures |
| 14 | ASTM D 5361 | Standard Practice for Sampling Compacted Bituminous Mixtures for Laboratory Testing |
| 15 | ASTM D 92 | Flash and Fire Point |

Table 5. List of Certified Bricks, Stone, & CMU's Tests

| No | Test Method | Test Procedure Title |
|----|-------------|--|
| 1 | ASTM C 90 | Standard Specification for loadbearing Concrete Masonry Unit |
| 2 | ASTM C 140 | Sampling and Testing Concrete Masonry and Related Units |
| 3 | ASTM C 1552 | Standard Practice for Capping Concrete Masonry Units, Related Units and Masonry Prisms for Compression Testing |

Table 6. List of Certified Steel Tests

| No | Test Method | Test Procedure Title |
|----|-------------|--|
| 1 | ASTM A 615 | Deformed and Plain Carbon Steel Bars for Concrete Reinforcement 90 per bar |
| 2 | ASTM E 8 | Tension Testing of Metallic Materials |