

Laboratory Certification For
Axiom Engineering Company

Lab ID: LCP-021

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Expiry date: July 30th, 2018

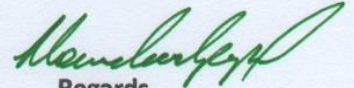
This letter confirms the completion of inspection and certification for Axiom, which is located at Ulmoe-e-Itmae Road, St # 8, Khushal Khan Mina, District 5, Kabul Afghanistan. This laboratory should now be considered as **Certified for a period of 6-months** from the date of this letter. This laboratory 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 D2172**) 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. Mr. Noor Ahmad 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 AXIOM 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 78 tests, as shown on attached sheets and summarized as:

- Table 1: 11
Table 2: 4
Table 3: 17
Table 4: 22
Table 5: 17
Table 6: 4
Table 7: 3


Regards,

Mowlood Popal

President of Afghanistan Builders Association



Axiom Certified Laboratory Tests

Table 1. List of Certified Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D421	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 of Soils
3	ASTM D854	Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer
4	ASTM D4318	Standard Test Methods Liquid & Plastic Limits & Plasticity Index
5	ASTM D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
6	ASTM D698	Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³ (2,700 Kn-m/m ³))
7	ASTM D1556	Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method
8	ASTM D1883 AASHTO 193	Standard Test Method for CBR (California Bearing Ratio) of Laboratory-Compacted Soils
9	ASTM D2216	Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
10	ASTM D4944	Standard Test Method for Field Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Tester
11	ASTM D2487	Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

Table 2. List of Certified Advance Soil Tests

No	Test Method	Test Procedure Title
1	ASTM D 2435	Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading
2	ASTM D 2166	Unconfined Compressive Strength of Cohesive Soil
3	ASTM D 5333	Measurement of Collapse Potential Soils
4	ASTM D 1586	Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils

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

No	Test Method	Test Procedure Title
1	ASTM C33	Standard Specification for concrete Aggregates
2	ASTM C75	Standard Practice for Sampling of Aggregates
3	ASTM C702	Standard Practice for Reducing Samples of Aggregate to Testing Size
4	ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
5	ASTM C127	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
6	ASTM C128	Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
7	ASTM C29	Standard Test Method for Unit Weight and Voids in Aggregate
8	ASTM C131	Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
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 C88	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
11	ASTM C142	Standard Test Method for Clay Lumps and Friable Particles in Aggregates
12	ASTM C117	Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
13	ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
14	ASTM C70	Surface Moisture in Fine Aggregates (Natural Moisture)
15	ASTM C566	Total Evaporation Moisture Content of aggregates by drying
16	ASTM D3744	Aggregates Durability Index
17	ASTM D 5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate

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

No	Test Method	Test Procedure Title
1	ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
2	ASTM C42	Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
3	ASTM C192	Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
4	ASTM C617	Standard Practice for Capping Cylindrical Concrete Specimens
5	ASTM C1231	Use of Unbounded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders

No	Test Method	Test Procedure Title
6	ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
7	ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
8	ASTM C805	Standard Test Method for Rebound Number of Hardened Concrete
9	ASTM C109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
10	ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
11	ASTM C1019	Standard Test Method for Sampling and Testing Grout
12	ASTM C187	Normal Consistency of Hydraulic Cement
13	ASTM C305	Mechanical Mixing of Hydraulic Cement Paste and Mortars of Plastic Consistency
14	ASTM C191	Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
15	ASTM C184	Fineness of Cement by Dry Sieving Through Sieve # 200
16	ASTM C189	Soundness Test of Cement
17	ASTM C188	Standard Test Method for Density of Hydraulic Cement
18	ASTM C172	Sampling of Freshly Mixed Concrete
19	ASTM C1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
20	ASTM C174	Concrete Thickness By Drilled Core
21	ASTM C90	Loadbearing Concrete Masonry Unit
22	ASTM C140	Sampling and Testing Concrete Masonry Units and Related Units

Table 5. 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
3	ASTM D 92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
4	ASTM D 113	Standard Test Method for Ductility of Bituminous Materials
5	ASTM D 70	Standard Test Method for Density of Semi-Solid of Bituminous Materials
6	ASTM D 140	Sampling Bituminous Materials
7	ASTM D 979	Standard Practice for Sampling Bituminous Paving Mixtures
8	ASTM D 1188	Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
9	ASTM D 1559	Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
10	ASTM D 2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

No	Test Method	Test Procedure Title
11	ASTM D 2726	Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
12	ASTM D 5349	Thickness or Height of Compacted Bituminous Paving Mixtures Specimen
13	ASTM D 5361	Standard Practice for Sampling compacted Bituminous Mixtures for Laboratory Testing
14	ASTM D 5444	Standard Test Method for Mechanical Size Analysis of Extracted Aggregate
15	ASTM D 6926	Standard Practice for Preparation of Bituminous Specimens Using Marshall Apparatus
16	ASTM D 6927	Standard Test Method for Marshall Stability and Flow of Bituminous Mixtures
17	ASTM D 546	Standard Test Method for Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures

Table 6. List of Certified Stone, Bricks & Masonry Units Tests

No	Test Method	Test Procedure Title
1	ASTM C 97	Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone
2	ASTM C 170	Standard Test Method for Compressive Strength of Dimension Stone
3	ASTM C 1552	Standard Practice for Capping Concrete Masonry Units, Related Units and Masonry Prisms for Compression Testing
4	ASTM C 67	Standard Test Methods for Sampling and Testing Brick and Structural Clay

Table 7. List of Certified Steel Tests

No	Test Method	Test Procedure Title
1	ASTM A 370	Methods and Definition for Mechanical Testing of Steel Products
2	ASTM A 307	Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile strength
3	ASTM D 615	Deformed and Plain Carbon Steel Bars for Concrete Reinforcement