

Laboratory Certification For  
Shawal Construction & Geotechnical Company

Lab ID: LCP-024

Issue date: Oct 17, 2016

Expiry date: Oct 16, 2017

This letter confirms the completion of inspection and certification for Shawal Construction & Geotechnical Company, which is located at House # 1646, Street # 3, District # 3, Dehberi, 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:

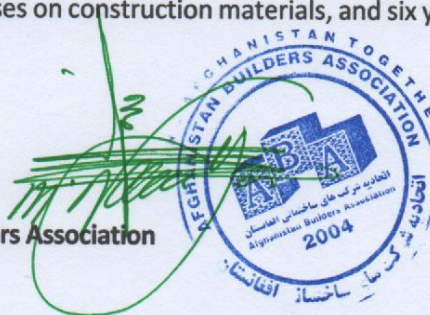
- A. Continued employment of the following individuals while without their oversight, the laboratory will require recertification:
  1. Mohammad Ashraf Masoud laboratory manager; and
  2. Other Senior Technicians who were inspected and certified during the inspection, a list of certified technicians can be provided upon request;
- B. If the calibration certificates of equipments expire or become invalid as per the relevant ASTM or AASHTO 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/Lab-certification-program.html>. The inspection and certification process for the Shawal CGC 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.

Regards,

Naem Yassin

President of Afghanistan Builders Association  
(ABA)



### Shawal CGC Certified Laboratory Tests

**Table 1. List of Certified Soil Tests for Shawal CGC**

No	Test Method	Test Procedure Title
1	ASTM D 421	Standard Practice for Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants
2	ASTM D 698	Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft <sup>3</sup> ( 2,700 KN-m/m <sup>3</sup> ))
3	ASTM D 0854	Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer
4	ASTM D 1140	Standard Test Methods for Amount of Material in Soils Finer than No. 200 (75 μm) Sieve
5	ASTM D 1556	Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method
6	ASTM D 1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
7	ASTM D 1883	Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils
8	ASTM D 2487	Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
9	ASTM D 2922	Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
10	ASTM D 4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
11	ASTM D 6951	Use of the Dynamic Cone Penetrometer in Shallow Pavement Applications
12	ASTMD 2435	One-Dimensional Consolidation Properties of Soils Using Incremental Loading
13	ASTM D 2166	Unconfined Compressive Strength of Cohesive Soil
14	ASTMD 5333	Standard Test Method for Measurement of Collapse Potential of Soils

**Table 2. List of Certified Aggregate (Fine and Coarse) Tests for Shawal CGC**

No	Test Method	Test Procedure Title
1	ASTM C 29	Unit Weight and Voids in Aggregate
2	ASTM C 88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
3	ASTM C 117	Material Finer than 75 um (No. 200) Sieve in Mineral Aggregates by Washing
4	ASTM C 127	Specific Gravity and Absorption of Coarse Aggregate
5	ASTM C 128	Specific Gravity and Absorption of Fine Aggregate
6	ASTM C 131	Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
7	ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
8	ASTM C 142	Clay Lumps and Friable Particles in Aggregates
9	ASTM C 535	Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
10	ASTM C 702	Reducing Samples of Aggregate to Testing Size
11	ASTM D 2419	Sand Equivalent of Soils and Fine Aggregate
12	ASTM D 4791	Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
13	ASTM D 4944	Field Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Tester
14	ASTM D 5821	Determining the Percentage of Fractured Particles in Coarse Aggregate
15	CRD-C 171	Standard Test Method for Determining Percentage of Crushed Particles in Aggregate
16	BS 812 Section 105.1	Testing Aggregates. Methods for Determination of Particle Shape. Flakiness Index.
17	BS 812 Section 105.2	Testing Aggregates. Methods for Determination of Particle Shape. Elongation Index for Coarse Aggregate.

**Table 3. List of Certified Cement, Grout, Mortar, & Concrete Tests for Shawal CGC**

No	Test Method	Test Procedure Title
1	ASTM C 39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
2	ASTM C 42	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
3	ASTM C 78	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
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 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 187	Normal Consistency of Hydraulic Cement
9	ASTM C 191	Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
10	ASTM C 192	Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
11	ASTM C 231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
12	ASTM C 617	Standard Practice for Capping Cylindrical Concrete Specimens
13	ASTM C 642	Density, Absorption, and Voids in Hardened Concrete
14	ASTM C 805	Standard Test Method for Rebound Number of Hardened Concrete
15	ASTM C 1064	Temperature of Freshly Mixed Portland Cement Concrete
16	ASTM C 1437	Standard Test Method for Flow of Hydraulic Cement Mortar

**Table 4. List of Certified Asphalt Cement and Asphalt Concrete Tests for Shawal CGC**

No	Test Method	Test Procedure Title
1	ASTM D 5	Penetration of Bituminous Materials
2	ASTM D 36	Softening Point of Bitumen (Ring-and-Ball Apparatus)
3	ASTM D 70	Density of Semi-Solid Bituminous Materials (Pycnometer Method)
4	ASTM D 92	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
5	ASTM D 113	Ductility of Bituminous Materials
6	ASTM D 140	Sampling Bituminous Materials
7	ASTM D 242	Mineral Filler for Bituminous Paving Mixtures
8	ASTM D 546	Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures
9	ASTM D 979	Sampling Bituminous Paving Mixtures
10	ASTM D 1074	Compressive Strength of Bituminous Paving Mixtures
11	ASTM D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Pavement Mixtures
12	ASTM D 2172	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
13	ASTM D 2726	Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
14	ASTM D 3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
15	ASTM D 3549	Thickness or Height of Compacted Bituminous Paving Mixture Specimens
16	ASTM D 5361	Sampling Compacted Bituminous Mixtures for Laboratory Testing
17	ASTM D 5444	Mechanical Size Analysis of Extracted Aggregate
18	ASTM D 6926	Preparation of Bituminous Specimens Using Marshall Apparatus
19	ASTM D 6927	Marshall Stability and Flow of Bituminous Mixtures
20	CRD-C 649	Standard Test Method for Unit Weight, Marshall Stability, and Flow of Bituminous Mixtures
21	CRD-C 650	Standard Method for Density and Percent Voids of Compacted Bituminous Paving Mixtures
22	CRD-C 652	Standard Test Method for Measurement of Reduction in Marshall Stability of Bituminous Mixtures Caused by Immersion in Water
23	AASHTO T 182	Coating and Stripping of Bitumen-Aggregate Mixtures
24	AASHTO T 230	Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures

**Table 5. List of Certified Stone, Bricks & Masonry Units Tests for Shawal CGC**

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	Load bearing 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 Units and Related Units
6	ASTM C 170	Standard Test Method for Compressive Strength of Dimension Stone
7	ASTM C 880	Flexural Strength of Dimension Stone
8	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 for Shawal CGC**

No	Test Method	Test Procedure Title
1	ASTM A 615	Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
2	ASTM E8/ T68	Tension Testing of Metallic Materials
3	T244/A370	Bend Test for Bars for Concrete Reinforcement