Accredited Laboratory

A2LA has accredited

HTS, INC. CONSULTANTS

Houston, TX

for technical competence in the field of

Construction Materials Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

AMERICAN ASSOCIATION FOR LABORATORY ACCREDITATION
CORPORATE SEAL 1978
DISTRICT OF COLUMBIA
A2LA

Presented this 5th day of December 2018.

President and CEO
For the Accreditation Council
Certificate Number 0029.01
Valid to October 31, 2020

For the tests to which this accreditation applies, please refer to the laboratory's Construction Materials Testing Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

HTS, INC. CONSULTANTS
416 Pickering
Houston, TX 77206
Terry J. Jackson, P.E. Phone: 713 692 8373

Valid To: October 31, 2020 Certificate Number: 0029.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory for:

CONSTRUCTION MATERIALS ENGINEERING

ASTM: C1077 (Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation);
D3666 (Agencies Testing and Inspecting Road and Paving Materials);
D3740 (Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction);
E329 (Agencies Engaged in Construction Inspection and/or Testing)

CONSTRUCTION MATERIALS TESTING

Test Method:	**Test Description:**
Aggregates:	
ASTM C29	Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C40	Organic Impurities in Fine Aggregates for Concrete
ASTM C117	Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C128	Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
ASTM C131	Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C142	Clay Lumps and Friable Particles in Aggregates
ASTM C535	Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C566	Total Evaporable Moisture Content of Aggregate by Drying
ASTM C702	Reducing Samples of Aggregate to Testing Size
Tex-400-A[1]	Sampling Flexible Base, Stone, Gravel, Sand, and Mineral Aggregates
Tex-401-A	Sieve Analysis of Fine and Coarse Aggregate
Tex-403-A	Saturated Surface-Dry Specific Gravity and Absorption of Aggregates
Tex-404-A	Determining Unit Mass (Weight) of Aggregates
Tex-406-A	Material Finer Than 75 µm (No. 200) Sieve in Mineral Aggregates (Decantation Test for Concrete Aggregates)

Test Method:	**Test Description:**
Tex-409-A	Free Moisture and Water Absorption in Aggregate for Concrete
Tex-410-A	Abrasion of Coarse Aggregate Using the Los Angeles Machine
Tex-413-A	Determining Deleterious Material in Mineral Aggregate
Bituminous:	
ASTM D979[1]	Sampling Bituminous Paving Mixtures
ASTM D2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2726	Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950[1]	Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3549[1]	Thickness or Height of Compacted Bituminous Paving Mixture Specimens
ASTM D3665[1]	Practice for Random Sampling of Construction Materials
ASTM D5444	Mechanical Size Analysis of Extracted Aggregate
ASTM D6307	Asphalt Content of Hot-Mix Asphalt by Ignition Method
Tex-200-F	Sieve Analysis of Fine and Coarse Aggregates
Tex-201-F	Bulk Specific Gravity and Water Absorption of Aggregate
Tex-204-F	Design of Bituminous Mixtures
Tex-203-F	Sand Equivalent Test
Tex-205-F	Laboratory Method of Mixing Bituminous Mixtures
Tex-206-F	Compacting Specimens Using the Texas Gyratory Compactor (TGC)
Tex-207-F	Determining Density of Compacted Bituminous Mixtures
Tex-208-F	Test for Stabilometer Value of Bituminous Mixtures
Tex-222-F	Sampling Bituminous Mixtures
Tex-225-F	Random Selection of Bituminous Mixture Samples
Tex-227-F	Theoretical Maximum Specific Gravity of Bituminous Mixtures
Tex-236-F	Determining Asphalt Content from Asphalt Paving Mixtures by the Ignition Method
Cement:	
ASTM C109/C109M (Compression Only)	Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
Concrete:	
ASTM C31/C31M[1]	Making and Curing Concrete Test Specimens in the Field
ASTM C39/C39M	Compressive Strength of Cylindrical Concrete Specimens
ASTM C42/C42M*	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
ASTM C78/C78M	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
ASTM C138/C138M[1]	Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
ASTM C143/C143M[1]	Slump of Hydraulic-Cement Concrete
ASTM C172/C172M[1]	Sampling Freshly Mixed Concrete
ASTM C173[1]	Air Content of Freshly Mixed Concrete by the Volumetric Method
ASTM C174/C174M	Measuring Thickness of Concrete Elements Using Drilled Concrete Cores
ASTM C192/C192M	Making and Curing Concrete Test Specimens in the Laboratory
ASTM C231/C231M[1]	Air Content of Freshly Mixed Concrete by the Pressure Method

Test Method:	**Test Description:**
ASTM C495	Compressive Strength of Lightweight Insulating Concrete
ASTM C617	Capping Cylindrical Concrete Specimens
ASTM C642	Density, Absorption, and Voids in Hardened Concrete
ASTM C805/C805M[1]	Rebound Number of Hardened Concrete
ASTM C1064/C1064M[1]	Temperature of Freshly Mixed Hydraulic-Cement Concrete
ASTM C1231/C1231M	Unbonded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders
Tex-407-A	Sampling Freshly Mixed Concrete
Tex-414-A[1]	Air Content of Freshly Mixed Concrete by the Volumetric Method
Tex-415-A[1]	Slump of Hydraulic Cement Concrete
Tex-416-A[1]	Air Content of Freshly Mixed Concrete by the Pressure Method
Tex-417-A[1]	Unit Weight, Yield, and Air Content (Gravimetric) of Concrete
Tex-418-A	Compressive Strength of Cylindrical Concrete Specimens
Tex-422-A	Measuring Temperature of Freshly Mixed Portland Cement Concrete
Tex-424-A	Obtaining and Testing Drilled Cores of Concrete
Tex-447-A[1]	Making and Curing Concrete Test Specimens
Tex-448-A	Flexural Strength of Concrete Using Simple Beam Third-Point Loading
Masonry:	
ASTM C1019	Sampling and Testing Grout
Fireproofing:	
ASTM E605[1]	Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members
Soils:	
ASTM C977 (Appendix XI)	Quicklime and Hydrated Lime for Soil Stabilization
ASTM D421 (Withdrawn 2016)[2]	Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants
ASTM D422 (Withdrawn 2016)[2]	Particle-Size Analysis of Soils
ASTM D558	Moisture-Density (Unit Weight) Relations of Soil-Cement Mixtures
ASTM D698	Laboratory Compaction Characteristics of Soil Using Standard Effort
ASTM D854	Specific Gravity of Soil Solids by Water Pycnometer
ASTM D1140	Amount of Material in Soils Finer than No. 200 (75-μm) Sieve
ASTM D1556[1]	Density and Unit Weight of Soil in Place by Sand-Cone Method
ASTM D1557	Laboratory Compaction Characteristics of Soil Using Modified Effort
ASTM D1633	Compressive Strength of Molded Soil-Cement Cylinders
ASTM D2216	Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D2487[1]	Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2488[1]	Description and Identification of Soils (Visual-Manual Procedure)
ASTM D2974	Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM D4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4643	Determination of Water (Moisture) Content of Soil by Microwave Oven Heating

Test Method:	**Test Description:**
ASTM D4718	Unit Weight and Water Content for Soils Containing Oversize Particles
ASTM D4972	pH of Soils
ASTM D6938	In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
Tex-103-E	Determining Moisture Content in Soil Materials
Tex-104-E	Determining Liquid Limits of Soils
Tex-105-E	Determining Plastic Limit of Soils
Tex-106-E	Calculating the Plasticity Index of Soils
Tex-107-E	Determining the Bar Linear Shrinkage of Soils
Tex-108-E	Determining the Specific Gravity of Soils
Tex-110-E	Particle Size Analysis of Soils
Tex-111-E	Determining the Amount of Material in Soils Finer than the 75 m (No. 200) Sieve
Tex-112-E	Admixing Lime to Reduce Plasticity Index of Soils
Tex-113-E	Laboratory Compaction Characteristics and Moisture-Density
Tex-114-E (Part I only)	Laboratory Compaction Characteristics and Moisture-Density Relationship of Subgrade, Embankment Soils, and Backfill Material
Tex-118-E	Triaxial Compression Test for Undisturbed Soils
Tex-128-E	Determining Soil pH
Tex-600-J (Part 1 and pH)	Sampling and Testing Lime
Steel (Shop & Field)[1]:	
AWS D1.1, D1.3	Fabrication & Erection – Visual Welding
AISC/RCSC	Manual of Steel Construction (Fabrication & Erection – Visual & Bolting)
API 1104	Shop Inspection (Fabrication & Welding)

[1] This laboratory meets A2LA R104 – General Requirements: Accreditation of Field Testing Laboratories for these tests.

[2] This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.

Accredited Laboratory

A2LA has accredited

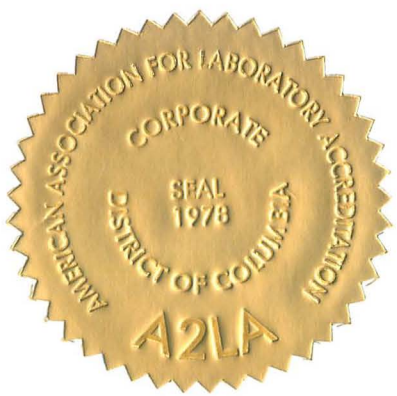
HTS, INC. CONSULTANTS

Houston, TX

for technical competence in the field of

Geotechnical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).



Presented this 5th day of December 2018.

President and CEO
For the Accreditation Council
Certificate Number 0029.02
Valid to October 31, 2020

For the tests to which this accreditation applies, please refer to the laboratory's Geotechnical Testing Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

HTS, INC. CONSULTANTS
416 Pickering
Houston, TX 77206
Terry J. Jackson, P.E. Phone: 713 692 8373

GEOTECHNICAL

Valid To: October 31, 2020 Certificate Number: 0029.02

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the laboratory's compliance with the R209 – Specific Requirements: Harris County/City of Houston/ Port Authority Geotechnical Engineering Testing Laboratory Accreditation Program), accreditation is granted to this laboratory to perform the following tests under the ASTM recommended practice D3740 and Geosynthetic Institute (GSI):

Test Method:	**Test Description:**
Soils:	
ASTM D421 (Withdrawn 2016)[1]	Dry Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants
ASTM D422 (Withdrawn 2016)[1]	Particle-Size Analysis of Soils
ASTM D698	Laboratory Compaction Characteristics of Soil Using Standard Effort
ASTM D558	Moisture-Density (Unit Weight) Relationship of Soil-Cement Mixtures
ASTM D854	Specific Gravity of Soil Solids by Water Pycnometer
ASTM D1140	Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing
ASTM D1557	Laboratory Compaction Characteristics of Soil Using Modified Effort
ASTM D1883	CBR (California Bearing Ratio) of Laboratory-Compacted Soils
ASTM D2166	Unconfined Compressive Strength of Cohesive Soil
ASTM D2216	Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM D2435	One-Dimensional Consolidation Properties of Soils Using Incremental Loading
ASTM D2487	Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2488[2]	Description and Identification of Soils (Visual-Manual Procedure)
ASTM D2850	Unconsolidated-Undrained Triaxial Compression Test on Cohesive Soils
ASTM D2974	Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM D4221	Dispersive Characteristics of Clay Soil by Double Hydrometer
ASTM D4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4546	One-Dimensional Swell or Collapse of Cohesive Soils

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Test Method:	**Test Description:**
ASTM D4643	Determination of Water (Moisture) Content of Soil by Microwave Oven Heating
ASTM D4647 (Undisturbed Samples Only)	Identification and Classification of Dispersive Clay Soils by the Pinhole Test
ASTM D4972	pH of Soils
ASTM D5084	Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter
ASTM D5102	Unconfined Compressive Strength of Compacted Soil-Lime Mixtures
ASTM D6572	Determining Dispersive Characteristics of Clayey Soils by the Crumb Test
ASTM D6938	In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
Tex-103-E	Determining Moisture Content in Soil Materials
Tex-104-E	Determining Liquid Limits of Soils
Tex-105-E	Determining Plastic Limit of Soils
Tex-106-E	Calculating the Plasticity Index of Soils
Tex-107-E	Determining the Bar Linear Shrinkage of Soils
Tex-108-E	Determining the Specific Gravity of Soils
Tex-111-E	Determining the Amount of Material in Soils Finer than the 75 m (No. 200) Sieve
Tex-114-E (Part 1 Only)	Laboratory Compaction Characteristics and Moisture-Density Relationship of Subgrade, Embankment Soils, and Backfill Material
Tex-118-E	Triaxial Compression Test for Undisturbed Soils
Tex-128-E	Determining Soil pH
600-J (Part 1 and pH)	Sampling and Testing Lime
Soil-Cement:	
ASTM D1633	Compressive Strength of Molded Soil-Cement Cylinders
Geosynthetics:	
ASTM D374	Thickness of Solid Electrical Insulation
ASTM D638	Tensile Properties of Plastics
ASTM D695	Compressive Properties of Rigid Plastics
ASTM D751	Coated Fabrics
ASTM D790	Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
ASTM D903	Peel or Stripping Strength of Adhesive Bonds
ASTM D2122	Determining Dimensions of Thermoplastic Pipe and Fittings
ASTM D2240 (Procedures A and D Only)	Rubber Property Durometer Hardness
ASTM D3786 (89)	Bursting Strength of Textile FabricsDiaphragm Bursting Strength Tester Method
ASTM D4533	Trapezoid Tearing Strength of Geotextiles
ASTM D4632	Grab Breaking Load and Elongation of Geotextiles
ASTM D4833	Index Puncture Resistance of Geomembranes and Related Products
ASTM D5199	Measuring the Nominal Thickness of Geosynthetics
ASTM D5261	Measuring Mass per Unity Are of Geotextiles
ASTM D5813	Cured-In-Place Thermosetting Resin Sewer Piping Systems

Test Method:	**Test Description:**
ASTM D6392	Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods
ASTM F2019	Rehabilitation of Existing Pipelines and Conduits by the Pulled in Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)

[1] This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.

[2] This laboratory meets A2LA *R104 – General Requirements: Accreditation of Field Testing Laboratories* for these tests.