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**CONSTRUCTION MATERIALS TESTING  
TEST METHOD SELECTION LIST**

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Instructions: Check each test method for which you are requesting accreditation.

<i><b>NVLAP Code</b></i>	<i><b>Test Method Designation</b></i>	<i><b>Short Title</b></i>
<b>ADMIXTURES</b>		
_____ 02/A35	ASTM C233	Testing Air-Entraining Admixtures for Concrete
_____ 02/A36	ASTM C311	Sampling and Testing Fly Ash or Natural Pozzolans for Use as a Mineral Admixture in Portland Cement Concrete
_____ 02/A37	ASTM C441	Effectiveness of Mineral Admixtures in Preventing Excessive Expansion of Concrete Due to the Alkali-Aggregate Reactions
<b>AGGREGATES</b>		
_____ 02/A03	ASTM C29	Unit Weight and Voids in Aggregates
_____ 02/A04	ASTM C40	Organic Impurities in Fine Aggregate
_____ 02/A05	ASTM C87	Effect of Organic Impurities in Fine Aggregates on Strength of Mortar
_____ 02/A06	ASTM C88	Soundness of Aggregates by Use of Sodium Sulfate
_____ 02/A07	ASTM C117	Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing
_____ 02/A08	ASTM C123	Lightweight Pieces in Aggregate
_____ 02/A09	ASTM C127	Specific Gravity and Absorption of Coarse Aggregate
_____ 02/A10	ASTM C128	Specific Gravity and Absorption of Fine Aggregate
_____ 02/A11	ASTM C131	Resistance to Degradation of Small-Size Coarse Aggregate in the Los Angeles Machine
_____ 02/A12	ASTM C136	Sieve Analysis of Fine and Coarse Aggregates
_____ 02/A13	ASTM C142	Clay Lumps and Friable Particles in Aggregates
_____ 02/A14	ASTM C289	Reactivity of Aggregates (Chemical Method)
_____ 02/A15	ASTM D75	Practice for Sampling Aggregates
_____ 02/A16	ASTM D2419	Sand Equivalent Value of Soils and Fine Aggregate

_____	02/A44	ASTM C566	Total Moisture Content of Aggregate by Drying
_____	02/A46	ASTM C535	Resistance to Degradation of Large-Size Coarse Aggregate in the Los Angeles Machine

**CEMENT**

_____	02/A17	ASTM C109	Compressive Strength of Hydraulic Cement
_____	02/A18	ASTM C114	Chemical Analysis of Hydraulic Cement
_____	02/A19	ASTM C115	Fineness of Portland Cement by the Turbidimeter
_____	02/A20	ASTM C151	Autoclave Expansion of Portland Cement
_____	02/A21	ASTM C157	Length Change of Hardened Cement Mortar and Concrete
_____	02/A22	ASTM C183	Sampling and Acceptance of Hydraulic Cement
_____	02/A23	ASTM C185	Air Content of Hydraulic Cement Mortar
_____	02/A24	ASTM C186	Heat of Hydration of Hydraulic Cement
_____	02/A25	ASTM C188	Density of Hydraulic Cement
_____	02/A26	ASTM C191	Time of Setting of Hydraulic Cement by Vicat Needle
_____	02/A27	ASTM C204	Fineness of Portland Cement by Air Permeability Apparatus
_____	02/A28	ASTM C227	Alkali Reactivity of Cement-Aggregate Combinations (Mortar Bar Method)
_____	02/A29	ASTM C265	Calcium Sulfate in Hydrated Portland Cement Mortar
_____	02/A30	ASTM C266	Time of Setting of Hydraulic Cement by Gillmore Needles
_____	02/A31	ASTM C305	Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency
_____	02/A32	ASTM C430	Fineness of Hydraulic Cement by the 45- $\mu$ m (No. 325) Sieve
_____	02/A33	ASTM C451	Early Stiffening of Portland Cement (Paste Method)
_____	02/A34	ASTM C452	Potential Expansion of Portland Cement Mortars Exposed to Sulfate
_____	02/A51	ASTM C780 (Annex A7)	Compressive Strength of Molded Masonry Mortar Cylinders and Cubes

\_\_\_\_\_ 02/A52            ASTM C1019            Sampling and Testing Grout

**CONCRETE**

\_\_\_\_\_ 02/A01            ASTM C39            Compressive Strength of Cylindrical Specimens

\_\_\_\_\_ 02/A02            ASTM C617            Capping Cylindrical Specimens

\_\_\_\_\_ 02/A40            ASTM C78            Flexural Strength of Concrete – Simple Beam with Third Point Loading

\_\_\_\_\_ 02/A41            ASTM C192            Making and Curing Concrete Specimens in the Laboratory (requires C173, C231, C138, C143, C136, C127, C128, C566, C1064, C29, C40, C117)

\_\_\_\_\_ 02/A43            ASTM C1064            Temperature of Freshly Mixed Portland Cement Concrete

\_\_\_\_\_ 02/A45            ASTM C42            Obtaining and Testing Drilled Cores and Sawed Beams of Concrete

\_\_\_\_\_ 02/A47            ASTM C457            Air-Void Content of Hardened Concrete

\_\_\_\_\_ 02/A48            ASTM C856            Petrographic Examination of Hardened Concrete

\_\_\_\_\_ 02/A53            ASTM C1231            Determination of Compressive Strength of Hardened Concrete Using Unbonded Caps

\_\_\_\_\_ 02/G01\*            ASTM C31            Making and Curing Test Specimens  
                                   ASTM C172            Sampling Freshly Mixed Concrete  
                                   ASTM C143            Slump of Portland Cement Concrete  
                                   ASTM C138            Unit Weight, Yield and Air Content  
                                   ASTM C231            Air Content-Pressure Method

*\*Note: 02/G01 is only available for accreditation as a group.*

\_\_\_\_\_ 02/G02            ASTM C173            Air Content-Volumetric Method

**GEOTEXTILES**

\_\_\_\_\_ 02/L28            ASTM D4354            Sampling of Geosynthetics for Testing

\_\_\_\_\_ 02/L33            ASTM D4632            Breaking Load and Elongation

\_\_\_\_\_ 02/L34            ASTM D3884            Abrasion Resistance

\_\_\_\_\_ 02/L35            ASTM D4886            Abrasion Resistance (Modified Method)

\_\_\_\_\_ 02/L36            ASTM D4533            Trapezoid Tearing Strength

\_\_\_\_\_ 02/L37            ASTM D4884            Seam Strength of Sewn Geotextiles

\_\_\_\_\_ 02/L38            ASTM D792            Specific Gravity

_____	02/L39	ASTM D4491	Water Permeability
_____	02/L40	ASTM D4716	Constant Head Hydraulic Transmissivity
_____	02/L41	ASTM D4751	Determining Apparent Opening Size
_____	02/L42	ASTM D1777	Measuring Thickness of Textiles
_____	02/L43	ASTM D4437	Determining the Integrity of Field Seams
_____	02/L44	ASTM D638	Tensile Properties of Plastic
_____	02/L45	ASTM D4595	Tensile Properties by Wide-Width Strip
_____	02/L48	ASTM D5321	Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method
_____	02/L49	ASTM D6243	Determining the Internal and Interface Shear Resistance of Geosynthetic Clay Liner by Direct Shear Method

**ROAD AND PAVING MATERIALS**

_____	02/M01	ASTM D5	Penetration of Bituminous Materials
_____	02/M02	ASTM D113	Ductility of Bituminous Materials
_____	02/M03	ASTM D140	Sampling Bituminous Materials
_____	02/M04	ASTM D243	Residue of Specified Penetration
_____	02/M05	ASTM D244	Testing Emulsified Asphalts
_____	02/M06	ASTM D402	Distillation of Cut-Back Asphaltic Products
_____	02/M07	ASTM D546	Sieve Analysis of Mineral Filler
_____	02/M08	ASTM D979	Sampling Bituminous Paving Mixtures
_____	02/M09	ASTM D1074	Compressive Strength of Bituminous Mixtures
_____	02/M10	ASTM D1075	Effect of Water on Cohesion of Compacted Mixes
_____	02/M11	ASTM D1188	Bulk Specific Gravity of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens
_____	02/M12	ASTM D1559	Resistance to Plastic Flow – Marshall Apparatus
_____	02/M13	ASTM D1560	Resistance to Deformation and Cohesion by Means of Hveem Apparatus
_____	02/M14	ASTM D1561	Preparation of Specimens – California Kneading Compactor
_____	02/M15	ASTM D1856	Recovery of Asphalt by the Abson Method

_____	02/M16	ASTM D2042	Solubility of Asphalt Material in Trichlorethylene
_____	02/M17	ASTM D2170	Kinematic Viscosity of Asphalts
_____	02/M18	ASTM D2171	Viscosity of Asphalts by Vacuum Capillary
_____	02/M19	ASTM D2172	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
_____	02/M20	ASTM D2872	Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin Film Oven Test)
_____	02/M21	ASTM D3142	Specific Gravity or API Gravity of Liquid Asphalts by Hydrometer Method
_____	02/M22	ASTM D3143	Flash Point of Cutback Asphalt with Tag Open Cup Apparatus
_____	02/M23	ASTM D3289	Specific Gravity or Density of Semi-Solid and Solid Bituminous Materials by Nickel Crucible
_____	02/M24	ASTM D2041	Theoretical Maximum Density (Rice Method)
_____	02/M25	ASTM D2726	Bulk Density of Cores (SSD)
_____	02/M27	ASTM D6307	Asphalt Content of Hot-Mix Asphalt by Ignition Method
_____	02/M30	ASTM D6927	Marshall Stability and Flow of Bituminous Mixtures
_____	02/M31	ASTM D6925	Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyrotory Compactor

**SOIL AND ROCK**

_____	02/L01	ASTM D4220	Preserving and Transporting Soil Samples
_____	02/L02	ASTM D422	Particle Size Analysis of Soils
_____	02/L03	ASTM D427	Shrinkage Factors of Soils
_____	02/L04	ASTM D698	Moisture Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-lb Rammer and 12-inch Drop
_____	02/L05	ASTM D854	Specific Gravity of Soils
_____	02/L06	ASTM D1140	Amount of Material in Soils Finer Than the #200 Sieve
_____	02/L07	ASTM D1556	Density of Soil by the Sand Cone Method
_____	02/L08	ASTM D1557	Moisture Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb Rammer and 18-inch Drop
_____	02/L09	ASTM D1558	Moisture Content Penetration Resistance Relations of Fine Grained Soils

_____	02/L10	ASTM D1883	Bearing Ratio of Laboratory Compacted Soils
_____	02/L11	ASTM D2166	Unconfined Compressive Strength of Cohesive Soil
_____	02/L12	ASTM D2168	Calibration of Laboratory Mechanical Rammer Soil Compactors
_____	02/L13	ASTM D2216	Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures
_____	02/L14	ASTM D2217	Wet Preparation of Soil Samples for Particle Size Analysis and Determination of Soil Constants
_____	02/L15	ASTM D2435	One-Dimensional Consolidation Properties of Soils
_____	02/L16	ASTM D2487	Classification of Soils for Engineering Purposes
_____	02/L17	ASTM D2488	Description and Identification of Soils (Visual-Manual)
_____	02/L18	ASTM D3080	Direct Shear Tests of Soils Under Consolidated Drained Conditions
_____	02/L19	ASTM D4254	Minimum Index Density of Soils and Calculation of Relative Density
_____	02/L20	ASTM D4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
_____	02/L21	ASTM D2434	Permeability of Granular Soils (Constant Head)
_____	02/L22	ASTM D2850	Unconsolidated, Undrained Strength of Cohesive Soils in Triaxial Compression
_____	02/L23	ASTM D2922	Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
_____	02/L24	ASTM D2974	Moisture, Ash, and Organic Matter of Peat Material
_____	02/L25	ASTM D3017	Moisture Content of Soil-Aggregate in Place by Nuclear Method (Shallow Depth)
_____	02/L26	ASTM D4221	Dispersive Characteristics of Clay Soil by Double Hydrometer
_____	02/L27	ASTM D4253	Max. Index Density of Soils - Vibratory Table
_____	02/L29	Corps of Engineers	Manual EM-1110-2-1906, Appendix VII, Permeability of Fine Grained Soils Using a Triaxial Apparatus
_____	02/L30	Corps of Engineers	Manual EM-1110-2-1906, Appendix X, Consolidated Undrained and Consolidated Drained Triaxial Test
_____	02/L31	ASTM D2167	Density of Soil in Place by the Rubber Balloon Method
_____	02/L46	ASTM D5084	Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter

_____	02/L47	ASTM D2844	Resistance <i>R</i> -Value and Expansion Pressure of Compacted Soils
_____	02/L50	ASTM D2664	Triaxial Compressive Strength of Undrained Rock Core Specimens Without Pore Pressure Measurements
_____	02/L51	ASTM D2938	Unconfined Compressive Strength of Intact Rock Core Specimens
_____	02/L52	ASTM D3148	Elastic Moduli of Intact Rock Core Specimens in Uniaxial Compression
_____	02/L53	ASTM D3967	Splitting Tensile Strength of Intact Rock Core Specimens
_____	02/L54	ASTM D4543	Preparing Rock Core Specimens and Determining Dimensional and Shape Tolerances
_____	02/L55	ASTM D5407	Elastic Moduli of Undrained Intact Rock Core Specimens in Triaxial Compression Without Pore Pressure Measurement
_____	02/L56	ASTM D5607	Performing Laboratory Direct Shear Strength Tests of Rock Specimens Under Constant Normal Force
_____	02/L57	ASTM D4644	Slake Durability of Shales and Similar Weak Rocks
_____	02/L58	ASTM D4648	Laboratory Miniature Vane Shear Test for Saturated Fine-Grained Clayey Soil

**STANDARD PRACTICES**

NVLAP will indicate that a laboratory complies with the following standard practices if: (a) accreditation is granted for all test methods required by the standard practice, and (b) all conditions and requirements stated in the standard practice are complied with. Applicants must be aware that some of these standards require that a professional engineer be in charge of the laboratory, and that performance of a minimum set of test methods is required.

_____	02/A38	ASTM E329	Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction
_____	02/A39	ASTM C1077	Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation (requires ASTM C31, C39, C40, C117, C127, C128, C136, C138, C143, C172, C173)
_____	02/A49	ASTM C1222	Standard Practice for Evaluation of Laboratories Testing Hydraulic Cement
_____	02/A50	ASTM C1093	Standard Practice for the Accreditation of Testing Agencies for Unit Masonry

_____	02/L32	ASTM D3740	Standard Practice for Minimum Requirement for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
_____	02/M26	ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials
_____	02/M28	ASTM E1816	Standard Practice for Ultrasonic Examinations Using Electromagnetic Acoustic Transducer (EMAT) Techniques
_____	02/M29	ASTM D6926	Standard Practice for Preparation of Bituminous Specimens Using the Marshall Apparatus

**STEEL MATERIALS**

_____	02/S01	ASTM A370 (Sec. 5-13)/E8	Tension Test - Steel Products
_____	02/S02	ASTM A370 (Sec. 14)/E190	Guided Bend Test for Ductility of Welds - Steel Products
_____	02/S03	ASTM A370 (Sec. 14)/E290	Semi-Guided Bend Test for Ductility - Steel Products
_____	02/S04	ASTM A370 (Sec. 15-16)/E10	Brinnell Hardness - Steel Products
_____	02/S05	ASTM A370 (Sec. 18)/E18	Rockwell Hardness - Steel Products
_____	02/S06	ASTM A370 (Sec. 18-23)/E18	Charpy Impact Testing - Steel Products
_____	02/S07	ASTM E709	Standard Recommended Practice for Magnetic Particle Examination
_____	02/S08	ASTM E165	Standard Recommended Practice for Liquid Penetrant Inspection Method



**CONSTRUCTION MATERIALS TESTING  
PROFICIENCY TESTING INSTRUCTIONS**

Laboratories seeking accreditation for Cement, Concrete, Aggregates, Soil or Bituminous testing are required to participate in the CCRL/AMRL proficiency sample programs. Individual participation in these programs is determined by the scope of accreditation desired. For example, laboratories applying for accreditation for Concrete testing only, will need to participate only in the Concrete sample program. Those applying for accreditation for Cement, Concrete, Aggregates, Soil, and Bituminous testing will need to participate in all five of these programs.

The proficiency sample program involves testing a sample of material in accordance with the standard test methods specified. The test results are returned for statistical analysis. Group values such as the average, the standard deviation and the coefficient of variation are determined. Individual results are then compared with the group values and a rating for the specific test is assigned. The proficiency test results can be used for self-evaluation as well as review by NVLAP.

To participate in the CCRL/AMRL proficiency sample programs, please contact the following:

CCRL, 301-975-6704, [www.ccrl.us](http://www.ccrl.us) (click on Proficiency Sample Program)

AMRL, 301-975-5450, [www.amrl.net](http://www.amrl.net) (click on the Proficiency Testing tab).

Select the sample programs most applicable to the test methods for which accreditation is being requested. **Laboratories that are new to the proficiency sample program(s) must submit payment with the participation request forms directly to CCRL/AMRL.** In addition, each new laboratory is required to complete and **return to NVLAP** the Proficiency Testing Release form, which is included in this package. CCRL and AMRL will send a copy of the proficiency testing results directly to NVLAP.

**Laboratories that are currently enrolled in the proficiency sample program(s) should not resubmit request forms or the release form, or send payment.** CCRL/AMRL will automatically invoice each participating laboratory before the next proficiency testing round is sent out. To ensure continuing participation, the annual invoice must be paid by the due date noted on the invoice.

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**CONSTRUCTION MATERIALS TESTING  
PROFICIENCY TESTING RELEASE**

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\_\_\_\_\_  
(Date)

MEMORANDUM FOR James Pielert  
CCRL/AMRL

From: Laboratory Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

P. O. Box: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

NVLAP Lab Code: \_\_\_\_\_

Authorized Representative \_\_\_\_\_  
(Signature)

Subject: Release of CCRL/AMRL Proficiency Sample Reports to the National Voluntary Laboratory Accreditation Program (NVLAP)

Permission is given for the Cement and Concrete Reference Laboratory (CCRL) and the AASHTO Materials Reference Laboratory (AMRL) to release our laboratory's proficiency sample program results to NVLAP, for use in the evaluation process for accreditation. These results fulfill the relevant requirements for NVLAP proficiency testing for the appropriate testing field(s) under the Construction Materials Testing laboratory accreditation program.

This release remains in effect as long as this laboratory participates in the NVLAP program.

Reports from the following proficiency sample programs may be released to NVLAP:

**PROFICIENCY TESTING**

- | CCRL                                                | AMRL                                                  |
|-----------------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> Portland Cement Concrete   | <input type="checkbox"/> Soil                         |
| <input type="checkbox"/> Portland Cement (Chemical) | <input type="checkbox"/> Bituminous Asphalt Cement    |
| <input type="checkbox"/> Portland Cement (Physical) | <input type="checkbox"/> Emulsified Asphalt           |
|                                                     | <input type="checkbox"/> Bituminous Concrete Design   |
|                                                     | <input type="checkbox"/> Bituminous Concrete Analysis |
|                                                     | <input type="checkbox"/> Coarse Aggregate             |
|                                                     | <input type="checkbox"/> Fine Aggregate               |

Return to: Betty Ann Torres, NIST/NVLAP, 100 Bureau Drive, Stop 2140, Gaithersburg, MD 20899-2140.