



# Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials<sup>1</sup>

This standard is issued under the fixed designation D 3666; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

## 1. Scope

1.1 This specification covers the minimum requirements for field and laboratory personnel, for establishing and maintaining a quality system, and establishes minimum qualifications for agencies engaged in the testing and inspection of bituminous paving materials.

1.2 Criteria are provided for evaluating the capability of an agency to properly perform designated tests on bituminous paving materials, and for establishing guidelines pertaining to an agency's organization, personnel, facilities, and quality system. This specification may be supplemented by more specific criteria, such as that in E329, and requirements for particular projects.

1.3 This specification can be used as a basis to evaluate testing or inspection agencies, or both, and is intended for use for the qualifying or accrediting, or both, of testing or inspection agencies, public or private, engaged in the testing and inspection of bituminous paving materials.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

### 2.1 ASTM Standards:

- C 29/C29M Test Method for Unit Weight and Voids in Aggregate<sup>2</sup>
- C 128 Test Method for Specific Gravity and Absorption of Fine Aggregate<sup>2</sup>
- C 138 Test Method for Unit Weight, Yield, and Air Content (Gravimetric of Concrete)<sup>2</sup>
- D 5 Test Method for Penetration of Bituminous Materials<sup>3</sup>
- D 36 Test Method for Softening Point of Bitumen (Ring-

and-Ball Apparatus)<sup>4</sup>

- D 70 Test Method for Specific Gravity and Density of Semi-Solid Bituminous Materials<sup>3</sup>
- D 92 Test Method for Flash and Fire Points by Cleveland Open Cup<sup>5</sup>
- D 113 Test Method for Ductility of Bituminous Materials<sup>3</sup>
- D 139 Test Method for Float Test for Bituminous Materials<sup>3</sup>
- D 244 Test Methods for Emulsified Asphalts<sup>3</sup>
- D 290 Practice for Bituminous Mixing Plant Inspection<sup>3</sup>
- D 1074 Test Method for Compressive Strength of Bituminous Mixtures<sup>3</sup>
- D 1075 Test Method for Effect of Water on Compressive Strength of Compacted Bituminous Mixtures<sup>3</sup>
- D 1559 Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus<sup>3</sup>
- D 1560 Test Methods for Resistance to Deformation and Cohesion of Bituminous Mixtures by Means of Hveem Apparatus<sup>3</sup>
- D 1561 Practice for Preparation of Bituminous Mixture Test Specimens by Means of California Kneading Compactor<sup>3</sup>
- D 1754 Test Method for Effect of Heat and Air on Asphaltic Materials (Thin-Film Oven Test)<sup>3</sup>
- D 1856 Test Method for Recovery of Asphalt from Solution by Abson Method<sup>3</sup>
- D 2041 Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures<sup>3</sup>
- D 2170 Test Method for Kinematic Viscosity of Asphalts (Bitumens)<sup>3</sup>
- D 2171 Test Method for Viscosity of Asphalts by Vacuum Capillary Viscometer<sup>3</sup>
- D 2872 Test Method for Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test)<sup>3</sup>
- D 3142 Test Method for Specific Gravity or API Gravity of Liquid Asphalts by Hydrometer Method<sup>3</sup>
- D 3143 Test Method for Flash Point of Cutback Asphalt with Tag Open-Cup Apparatus<sup>3</sup>
- D 5506 Practice for Organizations Engaged in the Certification of Personnel Testing and Inspecting Bituminous Paving Materials<sup>3</sup>
- E 329 Specification for Agencies Engaged in the Testing

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.02.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 04.03.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 04.04.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 05.01.

and/or Inspection of Materials Used in Construction<sup>6</sup>

### 3. Terminology

#### 3.1 Definitions:

3.1.1 *quality system*—the organizational structure, responsibilities, procedures, activities, capabilities and resources that together aim to ensure that laboratory services satisfy data requirements.

#### 3.2 Definitions of Terms Specific to This Standard:

3.2.1 *agency*—the organization engaged to test or inspect bituminous materials as required by a specification or contract.

3.2.2 *quality system manual (QSM)*—a set of documents describing an agency's quality system.

3.2.3 *user*—the person or organization engaging the agency to provide inspections or tests; or using this specification to evaluate or accredit the agency.

### 4. Significance and Use

4.1 This specification provides the basic minimum criteria for use in evaluating the qualifications of testing or inspection agencies, or both, for bituminous paving materials. The criteria may be supplemented by more specific criteria and requirements. An individual user can also use it to judge the qualification of an agency.

4.2 The intent of this specification is to provide a consensus basis for evaluating a testing or inspection agency, or both, with respect to that agency's capability to objectively and competently provide the specific services needed by the user.

4.3 This specification may be used as a basis for accreditation.

### 5. Responsibilities and Duties

5.1 The agency shall ensure that only inspections or tests for which it is adequately equipped and staffed are performed.

5.2 The agency shall ensure that personnel perform only inspections and tests for which they are adequately trained, qualified and certified in accordance with applicable specifications.

5.3 The agency shall ensure that all equipment is properly maintained in good operating condition and is calibrated as applicable.

5.4 The agency shall perform all testing and inspection in accordance with appropriate standards and quality control criteria. Documents unique to the user shall be furnished to the agency.

### 6. General Capabilities

6.1 *Laboratory Testing*—The laboratory testing services of a bituminous paving materials testing agency shall include some or all of the following capabilities:

6.1.1 Testing of bituminous materials and mixtures in the laboratory,

6.1.2 Testing of aggregate for compliance with specification requirements,

6.1.3 Preparation and evaluation of mix design in accordance with the proper method common to the geographical

area in which it offers services or in accordance with the appropriate ASTM or AASHTO standard procedure,

6.1.4 Determination of percent binder and gradation of plant aggregates in plant mix, and

6.1.5 Determination and verification of mix properties for comparison with the mix design.

6.2 *Field Testing and Inspection*—The field services of a bituminous paving materials testing and inspection agency shall include some or all of the following capabilities:

6.2.1 Investigation of aggregate at the source for compliance with specification requirements,

6.2.2 Inspection of proportioning and mixing at the plant or project site in accordance with Practice D 290 or user's requirements.

6.2.3 Inspection of handling, laying, and rolling operations of the mixture at the site,

6.2.4 Determination of thickness of compacted mixture, and

6.2.5 Determination of density and the percent compaction of a bituminous pavement after construction.

NOTE 1—Since the requirements for construction control can vary widely from project to project depending upon the nature of the mixture, location, and intended use of the bituminous mixture in the project, the capability of the agency for testing and inspection should be that necessary to accomplish construction control of the user's specific project or special requirements.

### 7. Personnel Qualifications

7.1 *Management and Supervision*—The testing and inspection services of the agency shall be under the direction of a person charged with scientific or engineering managerial responsibility. This person should be a registered engineer and a full-time employee of the agency and shall have a minimum of 5 years experience in inspecting and testing of bituminous materials and construction; however, in place of being a registered engineer, a person with equivalent science-oriented education and experience in having satisfactorily directed testing or inspection services, or both, of bituminous paving materials is acceptable. This person shall possess all applicable professional licenses or certificates required by public law or requirements of the authority in one or more fields which the person directs. A NICET Level IV Certification in "Construction Materials Testing—Subfield Asphalt" would be considered an example of an acceptable certification of the experience of this individual.

NOTE 2—The National Institute for Certification in Engineering Technologies (NICET) is a nationally recognized certification organization.<sup>7</sup>

7.2 *Supervising Laboratory Technician*—The supervising laboratory technician shall have at least 5 years experience performing tests on bituminous materials. This person shall be able to demonstrate, either by oral or written examination, or both, the ability to perform the tests normally required in the manner stipulated under ASTM or other governing procedures and shall be capable of evaluating the test results in terms of specification compliance. This person shall possess an appropriate certification from a national or state organization (Note

<sup>6</sup> Annual Book of ASTM Standards, Vol 14.02.

<sup>7</sup> National Institute for Certification in Engineering Technologies, 1420 King Street, Alexandria, VA 22314-2715.

3). A NICET Level III Certification in “Construction Materials Testing—Subfield Asphalt” would satisfy this requirement.

**7.3 Supervising Field or Plant Technician or Inspector**—This person shall have at least 5 years experience in inspecting the kind of work involved in the bituminous construction project. This person shall be able to demonstrate either by oral or written examination, or both, the ability to perform correctly the required duties. This person shall possess an appropriate certification from a national or state organization (Note 3). A NICET Level III Certification in “Construction Materials Testing—Subfield Asphalt” would satisfy this requirement.

**7.4 Inspector or Testing Technician**—This person shall have a high school diploma or equivalent and have had sufficient on-the-job training or trade school training to properly perform the test or inspection to which the person is assigned. This person must be able to demonstrate either by oral or written examination, or both, competence for the test or inspection which is being conducted and possess an appropriate certification from a national or state organization (Note 3). A NICET Level II Certification in “Construction Materials Testing—Subfield Asphalt” would satisfy this requirement. A NICET Level I, with the appropriate training and experience, might also be utilized in this position, but only with the specific approval of the user of this standard. The Inspector or Testing Technician shall work under the direct supervision of one meeting the requirements of 7.2 or 7.3 but shall not be permitted to independently evaluate test results or inspections.

**7.5** It is satisfactory for a person to fill one or more of the levels of management, supervision, inspector or technician positions in accordance with 7.1, 7.2 and 7.3 provided that person qualifies for the highest level. It is also recognized that frequently a few laboratory control tests are conducted at small field or peripheral locations; it is not the intent of this practice that the supervisory personnel be directly present at such locations at all times.

NOTE 3—The organization certifying should meet the requirements of Practice D 5506.

## 8. Quality System Criteria

8.1 The agency shall establish and implement a quality system which meets the following criteria:

**8.1.1 Quality System Manual (QSM)**—The agency shall establish and maintain a QSM that conforms to the requirements in Section 9. Each document in the QSM shall indicate its preparation date. If a document is revised, the date of revision shall be indicated on the document. The QSM shall be available for use by laboratory staff.

**8.1.2 Quality System Management**—The agency shall designate a person(s) having responsibility for determining if quality system implementation activities are being conducted by agency staff in the manner specified in the agency’s quality system manual. This individual(s) shall have direct access to top management (Note 4).

NOTE 4—This individual(s) may have other responsibilities (for example, laboratory manager).

NOTE 5—Inspection and testing procedures may reference published standards.

**8.1.3 Equipment Calibration and Verification**—The agency

shall calibrate or verify all significant testing equipment associated with tests covered by the scope of this standard which the agency performs. As a minimum, the equipment listed in Table 1 shall be included if it is associated with tests performed by the agency. Applicable equipment shall be calibrated or verified at the intervals specified in the agency’s QSM. The intervals specified in the QSM shall be no greater than those indicated in Table 1 (Note 6). Newly acquired equipment without manufacturers certification and equipment that has not been calibrated or verified because it has been removed from service shall be calibrated or verified before being placed in service. The agency shall have detailed written procedures for all in-house calibration and verification activities not addressed in standards. These procedures shall indicate the equipment required to perform the calibration or verification.

NOTE 6—When a maximum calibration or verification interval for a specific piece of test equipment is specified in a standard, the maximum interval specified by this document is intended to be the same as the maximum interval specified by the standard.

**8.1.4 Inspection of Facilities**—The agency shall have its laboratory procedures and equipment inspected at intervals of approximately 2 years by an evaluation authority as evidence of its competence to perform required tests. The agency shall within 30 days of the receipt of the evaluation authority written report document on how the deficiencies were corrected.

**TABLE 1 Bituminous Materials Test Equipment**

Equipment—Test Method	Requirement	Interval (Month)
Saybolt Viscometers—D 244	Calibrate	36
Mechanical Shakers	Check sieving thoroughness	12
General Purpose Balances, Scales and Weights	Verify	12
Test Thermometers—D 5, D 70, D 113, D 2041, D 2170, D 2171, D 3142	Calibrate	6
Analytical Balances and Weights	Verify	24
Compression Testing Machine—D 1074, D 1075, D 1559, D 1560	Verify load indications	12
CA Kneading Compactor—D 1561	Calibrate	24
Timers—D 2170, D 2171	Check accuracy	6
Ovens	Verify temperature settings	4
Penetrometer and Accessories—D 5	Check dial and timer accuracy and needle condition	6
Ductility Machine—D 113	Check molds and speed of travel	12
TFO and RTFO Oven—D 1754, D 2872	Shelf/Carriage check rotation speed and temperature	12
Vacuum System—D 2041	Check pressure	12
Sieves	Check physical condition	6
Molds, Followers, Calibration Cylinders—D 1560, D 1561	Check critical dimensions	12
Molds, Manual Compaction Hammers, Breaking Heads—D 1559	Check critical dimensions and mass of hammer	12
Molds and Plungers—D 1074	Check critical dimensions	12
Brass Rings and Assembly—D 36	Check critical dimensions	12
Pycnometers—D 70	Check critical dimensions and physical condition	12
Collars and Floats—D 139	Check critical dimensions	12
Flowmeters—D 1856, D2872	Calibrate	12
Molds and Tampers—C 128	Check critical dimensions	24
Flash Cups—D 92, D 3143	Check critical dimensions	12

NOTE 7—The AASHTO Materials Reference Laboratory (AMRL) of the National Institute of Standards and Technology is a qualified national authority.

8.1.5 *Agency Accreditation*—The agency shall possess a certificate of accreditation listing D3666 from a national authority as evidence that it meets the requirements of this standard.

NOTE 8—Accreditation programs offered by AASHTO (AASHTO Accreditation Program—AAP), the American Association for Laboratory Accreditation (A2LA) and the National Voluntary Laboratory Accreditation Program (NVLAP) are examples of programs offered by national authorities.

8.1.6 *Proficiency Sample Testing*—The agency shall participate in applicable AMRL proficiency sample programs.

NOTE 9—The AASHTO Materials Reference Laboratory (AMRL) located at the National Institute of Standards and Technology in Gaithersburg, Maryland, distributes proficiency samples for bituminous materials testing.

8.1.7 *Test Records*—The agency shall maintain test records which contain sufficient information to permit verification of any test reports. Records pertaining to testing shall include original observations, calculations, derived data and an identification of personnel involved in sampling and testing. The agency shall prepare test reports which clearly, accurately and unambiguously present the information specified in Table 2. The procedure for amending reports shall require that the previously existing report be clearly referenced when an amendment is made. The references shall establish a clear audit trail from the latest issuance or deletion to the original report and its supporting data.

NOTE 10—The requirements in Table 2 apply to the record that is used to present the laboratory’s test results in their final form. In some cases, a test report or test data sheet is the final form of the data.

8.1.8 *Records Retention*—Records pertaining to testing, equipment calibration and verification, test reports, internal quality system reviews, proficiency sample testing, test technician training and evaluation, and personnel shall be retained by the laboratory in a secure location for a minimum of 1 year.

NOTE 11—Although a 1 year retention schedule is adequate in some instances, there are many circumstances when a longer retention may be advantageous to the agency. Records concerning the calibration and verification of equipment are an example. Retention schedules of this type usually require such records to be held throughout the useful life of the equipment.

8.1.9 *Equipment Calibration and Verification Records*—The agency shall maintain calibration and verification records for all equipment specified in the QSM. Such records shall include:

8.1.9.1 Detailed results of the calibration and verification work performed (dimensions, mass, force, frequency, temperature, time, etc.),

8.1.9.2 Description of the equipment calibrated or verified including model and serial number or other acceptable identification (See 9.1.3.1),

8.1.9.3 Date the work was done,

8.1.9.4 Identification of the individual performing the work,

8.1.9.5 Identification of the calibration or verification procedure used,

8.1.9.6 The previous calibration or verification date and the next due date, and

8.1.9.7 Identification of any in-house calibration or verification device used.

8.1.10 *External Audit Records*—The agency shall maintain records of any external audits and documentation describing how the deficiencies were corrected.

8.1.11 *Proficiency Sample Records*—The agency shall retain results of participation in proficiency sample programs including data sheets, summary reports, and documentation describing steps taken to determine the cause of poor results and corrective actions taken.

8.1.12 *Test Methods and Procedures*—The agency shall maintain copies of standard and nonstandard procedures for testing performed which is covered by the scope of this standard and shall ensure that the procedures are the most current and are readily accessible to employees performing the work.

## 9. Quality System Manual (QSM) Requirements

9.1 The agency shall establish and maintain a QSM meeting the following requirements:

9.1.1 *Organization and Organizational Policies:*

9.1.1.1 The QSM shall contain the legal name and address of the agency—and that of the main office or company, if different—and any other information needed to identify the organization.

9.1.1.2 The QSM shall contain the ownership and management structure of the agency. Names, affiliations and positions of principal officers and directors shall be listed.

9.1.1.3 The QSM shall contain an organization chart showing relevant internal organizational components.

9.1.2 *Staff:*

9.1.2.1 The QSM shall contain an outline or chart showing operational personnel positions and their lines of authority and responsibility.

9.1.2.2 The QSM shall contain position descriptions for each technical operational position shown on the agency’s organization chart in testing areas covered by the scope of this standard. These descriptions shall identify the position and include a description of the duties associated with the position, required skills, education and experience, and supervision exercised and received. A reference to where the required position descriptions may be found is acceptable if they are not included in the QSM.

9.1.2.3 The QSM shall contain a brief biographical sketch, noting the education, work experience, licensure, and certifications of technical staff involved in testing areas covered by the scope of this standard. Alternatively, the QSM may contain

**TABLE 2 Test Report Requirements (see Note 10)**

(1) Name and address of the testing laboratory
(2) Identification of the report and the date issued
(3) Name and address of the client or identification of the project
(4) Description and identification of the test sample
(5) Date of receipt of the test sample
(6) Date(s) of test performance
(7) Identification of the standard test method used and a notation of any known deviations from the test method
(8) Test results and other pertinent data required by the standard test method
(9) A name of the person(s) accepting technical responsibility for the test report

a reference to the location of the biographical sketches.

9.1.2.4 The QSM shall contain a document which describes the method(s) used to ensure that all agency technical staff are trained and qualified to perform tests covered by the scope of this standard. In addition to the description of training methods the document shall indicate what position(s) or employee(s) is responsible for the agency training program and maintenance of training records.

NOTE 12—There may be several different methods employed for differing conditions of staff experience and background including (1) on-the-job apprentice training (one on one) for new employees with little or no experience in laboratory or inspection work; (2) verification of competency by the agency for an individual with prior experience performing a specific test; (3) formal in-house training sessions for certification, rating, or competency evaluation; and (4) training by external organizations.

9.1.2.5 The QSM shall contain a document describing the method(s) used to evaluate staff competency to ensure that each test covered by the scope of this standard is performed in accordance with standard procedures. This description shall include the frequency of evaluations for each technician and indicate what position(s) or employee(s) is responsible for evaluating staff competency and maintaining records. These procedures shall ensure that each technician performing the test method is evaluated.

NOTE 13—Proficiency sample testing may be useful in evaluating staff competency, however, it should be used in conjunction with observation of actual testing performed.

9.1.2.6 The QSM shall contain a form(s) for recording training and competency evaluation activities summarized in 9.1.2.4 and 9.1.2.5 including the name of the trainee, name of the evaluator, test method evaluated, the dates and results.

#### 9.1.3 *Facilities and Equipment:*

9.1.3.1 *Inventory*—The QSM shall contain an inventory of major sampling, testing, calibration and verification equipment associated with the test methods covered by the scope of this standard. A reference to where the inventory is located is acceptable if it is not included in the QSM. The inventory shall include, for each piece of major equipment, the name, manufacturer, model and serial number. An identification number assigned by the agency or other unique identifying information may be substituted for the model and serial number if this is the practice normally followed by the agency.

NOTE 14—Major equipment includes equipment such as shakers, physical or chemical testing machines, balances, baths, ovens, microscopes, and computing equipment dedicated to testing. Equipment such as chairs, desks and file cabinets may be excluded. Major equipment does not usually include expendable items such as miscellaneous glassware, sieves, molds and viscometers.

9.1.3.2 *Equipment Calibration and Verification*—The QSM shall contain a list(s) giving a general description of equipment for performing tests covered by the scope of this standard which require calibration or verification. For each item listed the list shall include the interval of calibration or verification, a reference to the calibration or verification procedure used (Note 15), and the location of calibration and verification records.

NOTE 15—The reference to the calibration or verification procedure

used may indicate a standard calibration procedure, in-house calibration or verification procedure, or if the work is performed by an outside agency.

NOTE 16—In addition to being in the QSM this information may also be included in the calibration and verification records on each piece of equipment.

9.1.3.3 The QSM shall contain a document which describes the agency's method for ensuring that the calibration and verification procedures are performed for all required equipment at the specified intervals. This document shall include the position of the individual(s) responsible for ensuring that calibration and verification activities are carried out, and procedures for handling equipment which is new, removed from service, out of calibration or defective.

9.1.3.4 The QSM shall contain in-house equipment calibration and verification procedures, when they cannot be referenced in applicable standards, or have a reference to their location.

9.1.3.5 The QSM shall contain certificates or other documents that establish the traceability of in-house equipment or reference standards used for calibration and verification, or have a reference to their location in their agency.

#### 9.1.4 *Test Records and Reports:*

9.1.4.1 The QSM shall contain a document which describes methods used by the agency to produce test results and to prepare, check and amend test reports.

9.1.4.2 The QSM shall contain typical test report forms which illustrate the manner in which tests results and supporting information (See 8.8) are documented.

NOTE 17—A printout showing a typical test record is acceptable if the laboratory uses electronic media for report storage.

9.1.5 *Sample Management*—The QSM shall contain a document describing procedure(s) for sample identification, storage, retention, and disposal of samples.

NOTE 18—In this context, the term "storage" refers to what is done before testing. The term "retention" refers to what is done after testing.

#### 9.1.6 *Diagnostic and Corrective Action:*

9.1.6.1 The QSM shall contain a document(s) describing participation in proficiency sample and on-site inspection programs (Note 19), methods used to identify poor results and procedures followed when poor results or deficiencies occur.

NOTE 19—AMRL conducts on-site inspection and proficiency sample programs.

9.1.6.2 The QSM shall contain a document outlining the method(s) used in responding to external technical complaints.

9.1.7 *Internal Quality System Review*—The QSM shall contain a document describing the scope of internal quality system reviews, establishing the frequency of these reviews, identifying individuals responsible for the review, describing the distribution of reports to management and identifying the location of resulting records.

9.1.8 *Subcontracting*—The QSM shall contain a document describing the policies which the agency follows relative to subcontracting, if it engages in such activities. A reference to where the policies may be found is acceptable if they are not included in the QSM. These policies shall include procedures followed by the agency in selecting competent subcontractors who meet the requirements of this standard and reporting the

results of testing performed by subcontractors. If the agency does not engage in such activities, the QSM shall contain a statement to that effect.

sources; minimum requirements; organization; physical resources; qualifications; quality control; quality system; quality system manual; records

## 10. Keywords

10.1 construction materials testing; evaluation; human re-

## ANNEX

### (Mandatory Information)

#### A1. SURVEY FORM

A1.1 The following form can be used to assist in the gathering of information necessary to confirm whether an agency is in partial compliance with Specification D 3666 until a certificate of accreditation can be obtained. The certificate of accreditation is required in order to fully meet the requirements of Specification D 3666.

A1.2 This form should be supplemented as necessary in order to obtain all the information pertinent to the user's application.

Name of Laboratory/Agency: \_\_\_\_\_

Location of Laboratory/Agency: \_\_\_\_\_

NOTE A1.1—All questions apply to the local laboratory/agency you propose to use. If any question is inapplicable to you because you do not do the type of work involved, please state so. If you are planning to do that type of work in the future please indicate that, including expected time frame. If your answer to any question requires more space, please use additional sheets.

1. General Information:

(a) How long has your company been in the testing and inspection business?

(b) How long at this location?

2. What testing, inspection and controlled inspection services does your company provide with your own personnel at this location? Please provide a detailed list, including the individual tests your company can perform at this location.

3. Are you currently licensed?

(a) If yes, for what type(s) of work?

(b) License number: \_\_\_\_\_

4. Personnel:

(a) The Principal(s) of your firm:

1. Name and Title: \_\_\_\_\_
2. Full time employee of the company (Y/N) \_\_\_\_\_
3. Registered Engineer? (Y/N) \_\_\_\_\_
4. Education: Degree(s)? \_\_\_\_\_
5. Number of years experienced in Inspection and/or Testing of: Bituminous Paving Materials \_\_\_\_\_

(b) Your Technical Director of Inspection or Testing Services:

1. Name and Title: \_\_\_\_\_
2. Full time employee of the company (Y/N) \_\_\_\_\_
3. Registered Engineer? (Y/N) \_\_\_\_\_
4. Education: Degree(s)? \_\_\_\_\_
5. Number of years experience in Inspection and/or Testing of: Bituminous Paving Materials \_\_\_\_\_

(c) Your Supervisory or Senior Laboratory Technician(s): Name/Title/ Years of Experience Performing Tests in Applicable Test Facilities:

1. Bituminous Paving Test

Facility \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

2. Liquid Asphalt Test

Facility \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

3. Aggregates Test Facility \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

(d) Your Supervising or Senior Field Technician(s):

1. Name/Title/Years of Experience Inspecting and Sampling Applicable Materials in the Field:

2. Bituminous Paving Materials: \_\_\_\_\_

3. Aggregates: \_\_\_\_\_

Use additional sheets if needed.

5. Describe in detail your training program for:

(a) New employees:

(b) Current employees:

6. Describe how you supervise your employees in the:

(a) Field:

(b) Laboratory:

7. Describe the systems you use to evaluate staff competency.

8. Provide a description of your firm's methods of maintaining personnel records to document the qualifications, work experience and training history of professional, scientific, supervisory and technical personnel.

9. Has the laboratory at which you would do the testing on this contract been inspected by the AASHTO Materials Reference Library (AMRL)? (Y/N)

(a) If yes, please include a copy of the AMRL inspection report and your response to it.

10. Does your laboratory:

(a) Routinely participate in the CCRL or AMRL proficiency sample test program? (Y/N) \_\_\_\_\_

(b) Retain copies of all proficiency sample test reports? (Y/N) \_\_\_\_\_

(c) Have documentation describing procedures followed when poor proficiency sample test results are indicated? (Provide Copies) (Y/N) \_\_\_\_\_

11. How many licensed P.E.'s are on your local staff full-time? For each, please state their responsibilities, the number of years experience they have in testing and inspection work and how long they have been employed by your firm.

12. Is your firm accredited by AASHTO? BY NVLAP? BY A<sub>2</sub>LA? Other? (Provide copies of your certificates.)

13. How many technicians, inspectors, and engineers do you currently employ full time at this location? (This question applies only to staff you have on the payroll now. Evidence of current employment (W-2, etc.) may be required.)

14. How many of your field personnel are certified by NICET? In which field(s) and at which level(s)? (Provide copies of certificates.)

15. How many of your laboratory technicians have at least one year of full-time laboratory experience? How many are NICET Level II or III certified? (Provide copies of certificates.)

16. Does your laboratory have the following documentation:

(a) A general description of the laboratory's facilities for testing and related activities (for example, floor plan if available)? (Y/N) \_\_\_\_\_

(b) An inventory of major equipment used to sample materials and perform inspections and tests? (Y/N) \_\_\_\_\_

NOTE A1.2—The equipment inventories for the laboratory's testing units may be separate or combined. Does the inventory include the following for each item (if applicable):

1. Name of manufacturer? (Y/N) \_\_\_\_\_
2. Model and Serial Number? (Y/N) \_\_\_\_\_
3. Appropriate date equipment was placed in service? (Y/N) \_\_\_\_\_

17. Does your laboratory have the following documentation:

(a) A description of what test equipment is to be checked and how and when the work is to be performed? (Y/N) \_\_\_\_\_

(b) Records showing the results of work performed when checking test equipment? \_\_\_\_\_

Do the records include the following:

1. A description of the equipment checked? (Y/N) \_\_\_\_\_
2. The date the work was performed? (Y/N) \_\_\_\_\_
3. Name of the person checking the equipment? (Y/N) \_\_\_\_\_
4. The number of items checked and any equipment I.D. nos.? (Y/N) \_\_\_\_\_

(c) A list or record of all laboratory equipment requiring calibration/verification? (Y/N) \_\_\_\_\_

Does the list or record include the following for each item:

1. Frequency of calibration/verification? (Y/N) \_\_\_\_\_
2. Range of calibration/verification? (Y/N) \_\_\_\_\_
3. A reference to the calibration/verification procedure used? (Y/N) \_\_\_\_\_

(d) Written procedures describing how calibration/verification work is to be performed? (Y/N) \_\_\_\_\_

(e) Records showing traceability (if applicable) or the accuracy and reliability of all in-house calibration/verification equipment and reference used? (Y/N) \_\_\_\_\_

(f) Records showing the results of calibration/verification work performed? (Y/N) \_\_\_\_\_

Do the records include the following:

1. A description of the equipment calibrated/verified including Model and Serial Numbers? (Y/N) \_\_\_\_\_
2. The date of the person performing the calibration/verification? (Y/N) \_\_\_\_\_
3. Name of the person performing the calibration/verification? (Y/N) \_\_\_\_\_
4. Identification of in house calibration/verification equipment used if any? (Y/N) \_\_\_\_\_

18. Has the equipment used by your laboratory been calibrated, verified or checked at the following indicated frequencies?

(a) Test Equipment:

1. Mechanical Shakers—sieving thoroughness checked every 12 months? (Y/N) \_\_\_\_\_
2. GP Balances, Scales & Weights—Calibrated every 12 months? (Y/N) \_\_\_\_\_
3. Mechanical Compactor—Calibrated every 36 months (Y/N) \_\_\_\_\_
4. Ovens—Temperature settings checked every 4 months? (Y/N) \_\_\_\_\_
5. Molds (Test Method D 1559)—Critical dimensions checked every 12 months? (Y/N) \_\_\_\_\_
6. Manual Hammer (Test Method D 1559)—Weight and critical dimensions checked every 12 months? (Y/N) \_\_\_\_\_
7. Sieves—Physical condition checked every 6 months? (Y/N) \_\_\_\_\_

(b) Aggregate Test Equipment:

1. Unit Weight Measures (C 138/C 29/C 29M)—Calibrated every 12 months? (Y/N) \_\_\_\_\_
2. Mechanical Shakers—Sieving thoroughness checked every 12 months? (Y/N) \_\_\_\_\_
3. GP Balances, Scales and Weights—Calibrated every 12 months? (Y/N) \_\_\_\_\_
4. Sieves—Physical condition checked every 6 months? (Y/N) \_\_\_\_\_
5. Ovens—Temperature settings checked every 4 months? (Y/N) \_\_\_\_\_
19. Does your laboratory have and maintain the following:
  - (a) Books containing standard test procedure? (Y/N) \_\_\_\_\_
  1. Are the publications the most current editions? (Y/N) \_\_\_\_\_
  2. Are the books readily accessible to laboratory personnel? (Y/N) \_\_\_\_\_
  3. Are the books physically present in the laboratory section? (Y/N) \_\_\_\_\_

(b) A procedure or test manual referencing standard and detailing non-standard testing, sampling and inspection activities performed? (Y/N) \_\_\_\_\_

1. Is the manual kept up to date? (Y/N) \_\_\_\_\_
2. Is the manual readily accessible to laboratory personnel? (Y/N) \_\_\_\_\_

(c) A document describing procedures for recording, checking and processing data and reporting test results? (Y/N) (Provide copy) \_\_\_\_\_

(d) A document describing procedures for the selection, handling, identification, conditioning, storage, retention and disposal of test sample? (Y/N) (Provide copy) \_\_\_\_\_

20. Does your laboratory:

(a) Issue test reports which include the following: (Provide Copy)

1. Name and address of the testing laboratory? (Y/N) \_\_\_\_\_
2. Identification of the report and the date issued? (Y/N) \_\_\_\_\_
3. Name and address of the client and identification of the project? (Y/N) \_\_\_\_\_
4. Description and identification of the test sample? (Y/N) \_\_\_\_\_
5. Date of receipt of the test sample? (Y/N) \_\_\_\_\_
6. Date(s) of test(s) performance? (Y/N) \_\_\_\_\_
7. A description of any relevant sampling procedures? (Y/N) \_\_\_\_\_
8. Identification of the standard test method used, a notation of all known deviations from the test method, and all requirements of the test method that were not performed by the laboratory? (Y/N) \_\_\_\_\_
9. Test results and other pertinent data required by the standard? (Y/N) \_\_\_\_\_
10. A signature/name and title of the person(s) accepting technical responsibility for the test report? (Y/N) \_\_\_\_\_

(b) Clearly reference the report being amended whenever corrections or additions to test reports are necessary? (Y/N) \_\_\_\_\_

21. Does your laboratory maintain a test record system which:


(a) Contains sufficient information to permit verification of any test report? (Y/N) \_\_\_\_\_

(b) Retains records for at least 6 years and includes original observations, calculations and derived data, and final test reports? (Y/N) \_\_\_\_\_

22. List all government agencies (local, state, federal) in the local area for whom you are currently doing testing and/or inspection work, or have done work for within the past three years.

For each agency list:

- (a) The type(s) of work done,
- (b) The date(s) and location(s) of the work,
- (c) The name, title, address and telephone number of a responsible party in each agency who is familiar with your laboratory's work.

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