
NTPEP Committee Work Plan for Evaluation of Asphalt Binder Suppliers

NTPEP Designation: ABS-21-01



**National Transportation Product Evaluation Program
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1. SCOPE

- 1.1 The National Transportation Product Evaluation Program (NTPEP) serves the member departments of the American Association of State Highway and Transportation Officials (AASHTO).
- 1.2 This NTPEP Committee Work Plan (hereafter referred to as the “work plan”) covers the requirements and auditing criteria for the NTPEP evaluation of asphalt binder Suppliers. This work plan is intended to be utilized with NTPEP document SP01, *Qualification of Highway Product Manufacturers Through the Use of NTPEP Audits*, to provide a comprehensive audit program for asphalt binder.
- 1.3 The purpose of the program is to provide audit information from Supplier facilities that comply with the Quality Control (QC) and product testing requirements of this program. AASHTO member departments can use this information in their quality assurance program for Supplier qualification. By participating in this program, the Supplier agrees to produce product(s) that meets or exceeds the requirements in applicable AASHTO/ASTM Designation Standard(s) and follow the minimum Quality Control provisions of their quality program.
- 1.4 Auditing the Supplier’s in-plant Quality Control facilities and procedures are included in this program. The Supplier agrees that NTPEP may use the audit reports along with other relevant information for review and verification of compliance with this NTPEP program and the applicable AASHTO/ASTM Designation Standard(s).
- 1.5 *This standard practice may involve hazardous materials, operations, and equipment. It does not purport to address all safety problems associated with its use. It is the responsibility of the user of this standard practice to establish the appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. REFERENCED DOCUMENTS

- 2.1 AASHTO Standards:
- M 226, Viscosity-Graded Asphalt Cement
 - M 320, Performance-Graded Asphalt Binder
 - M 332, Performance-Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test
 - R 15, Asphalt Additives and Modifiers
 - R 26, Certifying Suppliers of Performance-Graded Asphalt Binders
 - R 28, Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)
 - R 29, Grading or Verifying the Performance Grade (PG) of an Asphalt Binder
 - R 38, Quality Assurance of Standard Manufactured Materials
 - R 49, Determination of Low-Temperature Performance Grade (PG) of Asphalt Binders
 - R 66, Sampling Asphalt Materials

- R 92, Evaluating the Elastic Behavior of Asphalt Binders Using the Multiple Stress Creep Recovery (MSCR) Test
- T 44, Solubility of Bituminous Materials
- T 48, Flash and Fire Points by Cleveland Open Cup
- T 49, Penetration of Bituminous Materials
- T 51, Ductility of Asphalt Materials
- T 53, Softening Point of Bitumen (Ring and Ball Apparatus)
- T 228 Specific Gravity of Semi-Solid Asphalt Materials
- T 240, Effect of Heat and Air on a Moving Film of Asphalt Binder (Rolling Thin-Film Oven Test)
- T 300, Standard Method of Test for Force Ductility Test of Asphalt Materials
- T 301, Standard Method of Test for Elastic Recovery Test of Asphalt Materials by Means of a Ductilometer
- T 313, Determining the Flexural Creep Stiffness of Asphalt Binder Using the Bending Beam Rheometer (BBR)
- T 314, Determining the Fracture Properties of Asphalt Binder in Direct Tension (DT)
- T 315, Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)
- T 316, Viscosity Determination of Asphalt Binder Using Rotational Viscometer
- T 350 Multiple Stress Creep Recovery (MSCR) Test of Asphalt Binder using a Dynamic Shear Rheometer (DSR)

2.2 ASTM Standards:

- D8, Standard Terminology Relating to Materials for Roads and Pavements
- D95, Standard Test Method for Water in Petroleum Products and Bituminous Materials by Distillation
- D3665, Standard Practice for Random Sampling of Construction Materials
- D7173, Standard Practice for Determining the Separation Tendency of Polymer from Polymer-Modified Asphalt

2.3 NTPEP Documents:

- SP01 Qualification of Highway Product Manufacturers Through the Use of NTPEP Audits

3. TERMINOLOGY

- 3.1 *AASHTO/ASTM Designation Standard* – Referenced AASHTO Standard Specification, AASHTO Standard Method of Tests, ASTM Standard Specification, or ASTM Standard Test Method.
- 3.2 *Additive* – A material blended with the asphalt binder (e.g., liquid antistrip, warm mix additive, adhesion aid, etc.) or the aggregate (e.g., lime, hydrated lime, cement, etc.) with the intent to enhance the characteristics of the final blend of hot mix asphalt without altering the specified performance grade of the binder.
- 3.3 *Asphalt Binder* – an asphalt-based cement that is produced from petroleum residue either with or without the addition of nonparticulate organic modifiers.
- 3.4 *Auditor* – A NTPEP representative to review submittals, coordinate auditing, and report audit findings.
- 3.5 *Audits* – Documented reviews of a Supplier’s facility and associated test facilities by a NTPEP Auditor and any AASHTO member department co-auditor that wishes to participate.

- 3.6 *Certificate of Analysis (COA)* – a document issued by the Supplier that reports the actual results obtained on a series of tests that measure criteria determined by the specification requirement for the lot.
- 3.7 *Certificate of Compliance (COC)* – a document issued by the Supplier indicating that the asphalt binder supplied adheres to the requirements of the relevant specifications.
- 3.8 *Independent Laboratory* – An outside laboratory that performs raw material or finished product tests for the Supplier. NTPEP reserves the right to audit non-AASHTO accredited independent laboratories for the tests that are being performed for the Supplier.
- 3.9 *Inspection Attribute* – A characteristic that, by its presence or absence, classifies an item as conforming or nonconforming.
- 3.10 *Lot* – a specific quantity of material from a single source that is assumed to be produced or placed by the same controlled process.
A lot may be a fixed batch of material or a specified quantity in a continuous operation. If a batch operation is used to manufacture the asphalt binder, a tank may be defined as a lot. Lot size would be the amount of material batched into the tank. If a continuous process (in-line blending or a shipment from “live” tanks) is used to manufacture the asphalt binder, lot size may be obtained at random during the production for continuous operations. Lot size shall depend on the production method used and the quantity of the asphalt binder produced.
- 3.11 *Manufacturer* – Within the scope of NTPEP SP01 and this document, the term Supplier shall replace Manufacturer. See “Supplier” below.
- 3.12 *Modified Binder* – A neat asphalt binder that has had any amount of modifier added excluding additives.
- 3.13 *Modifier* – Any material of suitable manufacture that is used in virgin or recycled condition and that is dissolved, dispersed, or reacted in asphalt binder with the intent of changing or enhancing the continuous performance grade of the binder. The location and method of modification at the facility will determine the “Supplier Type” as defined in Section 7, below.
- 3.14 *Neat Binder* – A distilled residuum material derived from the refining of crude oil that is ready for use as an asphalt binder, or a blend of residuum ready for use as an asphalt binder free of modifiers or chemicals added after the refining process.
- 3.15 *Nonconformance* – Anything found to not meet the requirements of this work plan, referenced documents, or the Supplier’s QSM.
- 3.16 *NTPEP Asphalt Binder Technical Committee* – The NTPEP Technical Committee that includes members of AASHTO and members of Industry. The members are volunteers who are interested in the advancement of the product. The Technical Committee appoints a Chairman and a Vice-Chairman.
- 3.17 *PGAB or PGB* – Performance-Graded Asphalt Binder.
- 3.18 *Process Control (PC)* – A method for keeping a process within boundaries and/or the act of minimizing the variation of a process.
- 3.19 *Production Testing* – Testing performed by Quality Control personnel to guide manufacturing and to ensure that the process is in control. Results of this testing is not used to certify the asphalt binder.

- 3.20 *Quality Characteristic* – a product characteristic that is measured through testing, either for quality control purposes or for conformance with acceptance requirements.
- 3.21 *Quality Control (QC)* – the system used by Source or Supplier to monitor, assess, and adjust its production processes to ensure that the final product will meet the specified level of quality. [QC includes sampling, testing, inspection, evaluation, and corrective action (when required) to maintain continuous control of a production.]
- 3.22 *Quality Management System (QMS)* – Within the scope of NTPEP SP01 and this document, the term Quality System Manual shall replace Quality Management System. See “Quality System Manual” below.
- 3.23 *Quality System Manual (QSM)* – A written document that describes the overall Quality Control operating procedures of a Supplier. The QSM documents the internal policies for achieving quality and the assignment of responsibility and accountability for Quality Control within the Supplier’s organization.
- 3.24 *Record Testing* – Testing performed to certify that the asphalt binder is in compliance with the applicable specification. This testing is performed by an AASHTO Accredited laboratory.
- 3.25 *Source* –Any refinery, blending facility, or terminal that manufactures and distributes an asphalt binder product to an asphalt binder Supplier.
- 3.26 *Supplier* – Any refinery, blending facility, or terminal that supplies asphalt binder, documented on a bill of lading, directly to an asphalt mix producer.
- Note 1** – A state agency may deem an asphalt mix producer an asphalt binder Supplier and require such facility to partake in NTPEP audit program and certify the product meets specification.
- Additional terminology can be found in applicable AASHTO/ASTM Designation Standard(s) as well as the NTPEP Standard Practice SP01.

4. SUMMARY OF WORK PLAN

- 4.1 This work plan defines the evaluation procedures for asphalt binder Suppliers which will serve as the standard audit protocol for AASHTO’s NTPEP auditors.
- 4.2 The asphalt binder supplier audit program operates with the capabilities of AASHTO member departments and private testing facilities. Individual Suppliers are assessed an inspection fee that covers costs for actual facility inspection. A portion of the fee is used for maintaining the online data repository and reports that are accessible to all member departments and other end users.
- 4.3 This document is furnished for the benefit of Suppliers interested in participating in the program and AASHTO member departments that are interested in reviewing and utilizing the data generated through a facility audit.
- 4.4 Audit reports will provide information and test data and AASHTO encourages member departments to take advantage of the NTPEP program. However, the state highway agency will make the final determination regarding specification compliance and use of the products based on the data that is reported.

5. AGENCY USE

- 5.1 The state highway agency may elect to use the audit information to prequalify Suppliers for use on Agency projects. The information may also be used to assist in populating an Agency's qualified products list.
- 5.2 The audit program is not intended to be used for the final Acceptance of asphalt binder products used on agency projects.

6. SUPPLIER PARTICIPATION

- 6.1 Suppliers of asphalt binder, who elect to participate in the NTPEP program, must submit a completed NTPEP Pre-Audit Application to the attention of the NTPEP Liaison. This process is completed electronically through the NTPEP DataMine website.

7. SUPPLIER TYPES

- 7.1 The intent of this program is to evaluate Suppliers based on their facility's operations. The requirements of the audit will vary depending on how the facility accepts, tests, and certifies its asphalt binder products. For the purposes of this program the Supplier types will be designated by the following:
- 7.1.1 When a Supplier does not blend or modify binders received from a Source, the Supplier may elect to use the COA generated by that Source. When a Supplier uses the COA provided by the Source, they shall provide the Agency with the COA and a COC stating that the Source's COA was the basis for certification.
- The Supplier shall provide certification that the asphalt binder still meets the required performance grade and was not modified or blended after it was received.
- 7.1.2 If modifiers are utilized or if blending of asphalt binder from different sources takes place at the blending facility or terminal, then that facility must provide certification.
- 7.1.3 If modifiers are utilized or if blending of different PGAB grades to achieve a desired performance grade takes place at the asphalt mixture plant, the HMA producer shall be the Supplier and must provide the certification, as determined by the Agency.

8. QUALITY CONTROL SYSTEM REQUIREMENTS

- 8.1 Suppliers shall maintain an effective quality control system which is followed by the Supplier in order to achieve the desired level of quality. Their system shall establish guidelines and criteria for documenting and implementing PC and QC procedures for the asphalt binder.
- 8.2 Suppliers shall maintain a Quality System Manual (QSM) for the facility which shall be submitted to NTPEP for review for conformance with SP01 and this work plan.
- 8.2.1 At a minimum, the QSM shall be structured in accordance with AASHTO R 38, include the information required for a Quality Control Plan in accordance with AASHTO R 26, and contain the additional information listed below and in Appendix X1.
- 8.3 The Supplier's QSM will include procedures for inspection of the constituent and final materials, as well as the production and handling processes, by performing visual observations and check measurements and recording the results of such inspection at the frequency indicated in their

QSM. The procedures shall include the use of Source documentation and test results, when applicable.

8.3.1 The inspection procedures used by the Supplier should address major inspection components (i.e., equipment and materials). For each component, the QSM should list the following:

- Inspection attributes,
- Minimum inspection frequency,
- Point of inspection, and
- Inspection method.

Examples of possible inspection attributes may include checks such as:

- That flow meters are functioning properly.
- That truck scales are functionality properly and are clean.
- To see that the haul vehicle is acceptable to receive new material for delivery.
- To see that incoming asphalt binder is accompanied by necessary documentation.
- That asphalt binder storage temperature is maintained within set parameters.

Table 1: Example Inspection Schedule Format

Inspection Component	Inspection Attribute	Minimum Inspection Frequency	Point of Inspection	Inspection Method
Equipment				
Materials				

8.4 The Supplier's AASHTO accredited laboratory shall perform record testing on the finished material and record the results of such testing at the minimum frequency indicated in their QSM.

8.4.1 The Supplier may also choose to maintain a non-accredited "satellite" lab for production testing that is not used to certify the material.

8.5 The Supplier's QSM shall contain a detailed record testing schedule for asphalt binder lot certification, as well as a schedule for production testing for general quality control. The tests methods performed shall be in accordance with the applicable specifications for the asphalt binder grade(s).

8.5.1 The sampling and testing schedule shall list the:

- Quality characteristics,
- Test methods used to test for each quality characteristic,
- Minimum test frequency,
- Target value,
- Point of sampling, and
- Sampling method.

Examples of possible quality characteristics include:

- Viscosity
- Dynamic shear
- Rolling Thin Film Oven Residue
 - Mass Change
 - Dynamic Shear
- Pressure Aging Vessel Residue
 - Dynamic Shear
 - Creep Stiffness

The test schedules shall be formatted similar to Table 2.

Table 2: Example Test Schedule Format

Quality Characteristic	Test Method	Minimum Frequency	Test Type (Record/Production)	Laboratory	Point of Sampling	Sampling Method

- 8.6 Whenever a Supplier updates their QSM, the new version shall be forwarded to NTPEP along with an explanation of the changes to ensure the version on DataMine is current. A Desktop Review will be completed when a Supplier:
- Is removed from a NTPEP program for non-compliance and reapplies for participation.
 - Applies for participation after not participating in the program for one or more years.

9. PRODUCT DOCUMENTATION

- 9.1 The Supplier's Certificate of Analysis (COA) for the lot of asphalt binder shall document the quantity of material represented and contain all applicable test results required by the specification and the Agency.
- 9.2 The Supplier's Bill of Lading (BOL) shall conform to AASHTO R 26 which requires that it include:
- Name and location of Supplier,
 - Performance grade of material,
 - Quantity of material shipped,
 - Date of shipment,
 - Statement certifying the material meets specification requirements,
 - Statement certifying that the transport vehicle was inspected before loading and was found acceptable for the material shipment.
 - Handling and storage procedures shall be included with the finished product. and
 - Possible material incompatibility when blending the PGAB with other binders, modifiers, or additives.

- 9.3 The Supplier's Certificate of Compliance (COC) shall meet the requirements of the Agency and may include the following:
- Agency project/contract number.
 - Supplier's name.
 - Address of Supplier facility.
 - Name of product.
 - Complete description of the material.
 - Lot number and quantity.
 - Date(s) of laboratory testing.
 - Listing of all applicable specifications required by the Department for the product. Certificates shall reference the actual tests conducted on samples taken from the same lot and shall include a statement that the product to be incorporated into the project was produced in accordance with and meets the applicable specifications.
 - Certification stating that modifiers and additives that are banned by the Agency were not incorporated into the final product.
 - Signature of person having legal authority to act for the Supplier.

10. NTPEP AUDITS

- 10.1 The NTPEP Auditor will verify the Supplier's quality system as outlined below:
- 10.1.1 Supplier's QSM Desktop Review
A review of the Supplier's QSM is performed prior to the initial audit and every 5 years thereafter.
- 10.1.2 Initial and Annual NTPEP Audits
NTPEP will perform initial and annual quality control audits of each facility that a Supplier desires to be included in the program. These audits will include evaluation of production and testing associated with the product along with review of the following documents: QSM implementation, test reports, equipment calibration, verification of results, and check records. The Auditor may be assisted by co-auditor(s) from any AASHTO member department(s) that want to participate.
- 10.2 On-site audits will be comprised of the following steps:
- 10.2.1 Documentation Review – The Auditor will check for the current edition of the applicable Work Plan, review training and competency records, internal audits, management reviews, and check equipment records to verify the plant's calibration/verification/standardization frequency for equipment. The Auditor will also review inspection and test reports.
- 10.2.2 Production Review – During the production review, the Auditor will walk through the Supplier's process.
- 10.2.3 Storage Yard Review – The Auditor will note the condition of the Supplier's yard/storage facility in the audit report.
- 10.2.4 Quality Control Testing Evaluation – The Auditor will verify that the Supplier's record testing laboratory is currently AASHTO accredited and that any non-accredited satellite laboratories are evaluated in accordance with the QSM.
- 10.2.4.1 Review will show that the QC technicians are trained and evaluated and that they perform test procedures correctly and properly record information.
- 10.2.4.2 Review will show that equipment is maintained and calibrated/verified/standardized.

- 10.2.4.3 If requested, technicians at non-accredited satellite laboratories will perform sampling and testing for NTPEP auditors.
- 10.2.5 Quality Control Inspection Evaluation – Each Supplier will be asked to demonstrate the QC activities (inspection, sampling, and testing) that are performed as stated in the QSM. While performing each inspection and testing, the most current AASHTO or ASTM test methods will be referenced. The equipment used for each inspection and testing will be examined and applicable records will be reviewed. When testing is performed by an accredited laboratory, the evaluation of the laboratory testing will be performed by the AASHTO re:source.
- 10.2.6 Production Record Review of Products – The Auditor will select random lots of product for review of material traceability and production records.
- 10.2.7 Review of corrective action records – The Auditor will review the documentation of corrective actions and reporting of failed QC processes for compliance with the QSM.
- 10.2.8 Inspection of Products – The Auditor will select random lots of product for the demonstration of specification compliance. The Supplier will perform the necessary inspections to verify the product in the storage area meets the specification requirements.
Note 2 – If major deficiencies are noted during an on-site audit, a follow-up audit will be required.
- 10.3 NTPEP Follow-Up Audits and Testing – NTPEP follow-up audits at a Supplier’s location and associated laboratory (if applicable), may be conducted to determine compliance with program requirements.
Note 3 – If Nonconformances are noted during an audit, an investigation into the issue(s) will be conducted by the Supplier and all non-conformances will require resolution in accordance with Section 9 of NTPEP document SP01. A follow-up audit may be required and may be unannounced, regardless of the availability of key QC staff. The results of a follow-up audit will be furnished to the applicable NTPEP Committee.
- 10.4 Surveillance Audit – AASHTO member departments have the right to conduct their own surveillance audits of any Supplier and associated laboratory included in the program to determine compliance with the program requirements. These audits may be unannounced. The Auditor may randomly select samples of product to be tested in accordance with the applicable AASHTO/ASTM Standard(s). The cost of any testing will be at the AASHTO member department’s or Supplier’s expense.
Note 4 – If deficiencies are noted during a surveillance audit, the results of the audit will be forwarded to NTPEP.
- 10.5 NTPEP DataMine Website
An electronic library containing this Standard Practice and Work Plans along with a secure area where AASHTO member departments can view all Supplier’s: QSMs, Audit reports, and Corrective Action Reports. DataMine shows each Supplier’s status (compliant or otherwise) to NTPEP document SP01 Standard Practice and this Work Plan.

11. PRODUCT TESTING

- 11.1 Unlike traditional standard manufactured materials, PGAB is routinely tested by Agency laboratories. Sampling and testing of a Supplier’s product during the facility audit will not be required under this program.

12. DELIVERABLES – EVALUATION RESULTS AND DATA

- 12.1 Audit results (in the form of an Audit Report, Certificate, and any Corrective Action Reports) will be located in the web-based database – DataMine, as follows:
 - 12.1.1 All audit documents (Audit Report, Supplier QSM, and Corrective Action Report – when applicable) will be uploaded by the Auditor, as completed, and made available for review.
 - 12.1.2 Audit results will be made available to all participating states through the AASHTO/NTPEP DataMine website. No judgement as to a Supplier’s acceptability to any state DOT requirement is made in DataMine. End state user participants are responsible for establishing their criteria for Supplier acceptability.
- 12.2 The DataMine database can be accessed through the AASHTO/NTPEP website link at <http://data.ntpep.org/>.

13. KEYWORDS

- 13.1 NTPEP; Asphalt Binder; Supplier

ANNEX (MANDATORY INFORMATION)

X1. QUALITY SYSTEM MANUAL

X1.1. The Quality System Manual will address the following requirements:

X1.1 Supplier's quality statement

- Written policy or mission statement

X1.2 Supplier facility and products

- Facility address and telephone number.
- Standard manufactured materials produced.
- Overview of production process and storage capabilities.
 - In-line blending

X1.3 Terms and definitions

X1.4 Applicable specifications (AASHTO, ASTM, other)

X1.5 QC system roles and responsibilities

- Organizational Chart
- QC Manager
- QC Technicians
- QC personnel qualifications requirements
 - The Supplier's Quality Control Manager will be responsible for ensuring that all Quality Control testing, used for asphalt binder certification, is performed at an AASHTO Accredited laboratory. The Supplier's Quality Control Manager will be responsible for ensuring that all Quality Control testing, performed by a satellite laboratory, is performed by a qualified laboratory meeting the requirements of the QSM.
 - The Supplier's Quality Control Manager will meet the requirements established by the Supplier for the position.
- Production personnel responsibilities for quality
 - The QSM shall describe the specific training provided to production personnel and the operating procedures implemented by these personnel to ensure the required quality of all asphalt binder materials produced.

X1.6 QC laboratories

- Laboratory addresses and telephone numbers
- Laboratory accreditation or qualification
 - AASHTO accredited QC laboratory
 - Function of laboratory and test methods performed
 - Non-accredited satellite QC laboratory
 - Function of laboratory and test methods performed
- Testing equipment
- In the event the Supplier utilizes an independent laboratory for testing and the results are utilized in the generation of the test report, then the independent laboratory location will meet all requirements listed herein.

X1.7 Preproduction materials control

- Constituent material types and sources of supply. At a minimum, the QSM will address:

- Asphalt Binder –The QSM shall detail the processes followed when receiving and storing asphalt binder, including:
 - How new material is evaluated when delivered.
 - Identification of source and grade.
 - Where new material is stored and whether it is mixed with existing material in storage.
- Additives will be identified by brand, type of additive, product name, if applicable, and any test data used by the additive manufacturer to identify the product.
- Modifiers will be identified by type of modifier.
- Documentation received for constituent materials
- Process for determining if constituent material is acceptable for use
 - Visual inspection of constituent materials
 - Control and testing of constituent material properties
- Constituent materials storage

X1.8

Production materials control

- Procedures for asphalt binder modification
 - Types of modification utilized to alter the original asphalt binder in order to meet the required binder grade for shipment
 - Process of determining which modification and dosage to use
 - Method that modification is made
- Use of In-Line Blending
 - Describe equipment and process used to in-line blend
- Method for identifying and labeling products
- Storage of products
 - Method of storage and storage processes
 - Acceptable storage temperatures
 - Circulation and stirring requirements
 - Acceptable storage duration
- Shipping and handling of products
- Identification of material compatibility issues

X1.9

QC during production

- Lot and subplot sizes
- QC visual inspection procedures
- Sampling and testing schedule
 - Random sampling plan
 - Regular random testing
 - Reduced frequency of testing
 - Minimum frequency
 - Selective sampling
 - Initial testing
 - Quality Control testing for guiding supplier
- Sample identification system
- Standard QC sampling and testing methods (AASHTO, ASTM, other)
- Supplier-developed inspection, sampling, and testing procedures
- QC sample storage and retention procedures
- QC inspection and test result reporting
 - Initial series of test data for each performance grade
 - Monthly summary report
- Use of control charts
 - The Supplier will discuss if and how they utilize control charts.
- Statistical analysis of test results

- The Supplier will discuss if and how they utilize statistical analysis.
- Nonconforming inspection or test results
 - The QSM shall describe what material nonconformances may be observed, where in the production process they may occur, and the method used to resolve them.
 - The QSM shall include a declaration stating if a test result indicates that a shipment of asphalt binder is not in compliance with the purchase specifications, the Supplier shall:
 1. Immediately notify the Agency and applicable asphalt mixture plants of the shipment in question.
 2. Identify the material.
 3. Cease shipment until material complies with the specification.
 4. Notify the Agency and asphalt mixture plants prior to resuming shipment.
 5. Implement any mutually agreed-upon procedures for the disposition of the material.

X1.9

Postproduction QC activities

- Checking identification, storage, shipping, and handling of asphalt binder materials
 - Method and frequency of checking stored materials and storage processes.
 - Storage temperature
 - Circulation and stirring
 - Storage duration
 - Checking transport vehicles before loading and providing inspection report.
- QC records
 - All QC test results for asphalt binder will be documented in reports of the same format as the sample forms submitted in the QSM and will be kept for a minimum of five years.
 - The reports will document the actions taken in the event of product test failures.
 - The reports will show the Supplier location, date of production, and test results. Identification will be such that the test reports for any product can be located.
 - Monthly summary reports will be uploaded to NTPEP repository.
- Retention of inspection and test results and product traceability
- Issuance of materials certificate of analysis (COA)
- Issuance of materials certificate of compliance (COC)

X1.10

Customer Feedback

The QMS will include a procedure describing the customer feedback system. This procedure will indicate the following:

- What position(s) or employee(s) are responsible for customer feedback.
- Methods used to solicit, evaluate, and respond to customer feedback.
- Conditions under which corrective action will be implemented.

X1.11

Internal Audits of Each Facility Producing Product

The QSM will include a description of the procedures used to conduct internal audits. The Supplier, or an independent auditor hired by the Supplier, will perform these audits at least annually unless problems in the quality control program or with the quality of the product indicate more frequent audits are necessary. The internal audit procedures will ensure that the following is covered during internal audits as applicable:

- What position(s) or employee(s) are responsible for ensuring the internal audits are performed.
- Frequency, scope, and criteria used for performing the audits.
- Procedures for initiating and resolving corrective actions.
- Evaluation of quality control inspections.
- Inspection of testing equipment and calibrations, verifications, and standardizations.
- Observation of raw material sampling and control procedures.

- Observation of finished product sampling and testing procedures.
- Review of product certification procedures.
- Review of inspection and testing report documentation.
- Review of nonconforming product documentation and actions taken.

The QC System will ensure that:

- Audit findings are discussed with management and testing technicians and documented in a report.
- Corrective Actions are taken as necessary and documented in the report.

X1.12

Management Reviews of Each Supplier Facility

The QSM will include written procedures for performing management reviews. The procedures shall indicate the following:

- What positions(s) or employee(s) are responsible for ensuring that management reviews are performed at least annually.
- The frequency, scope and criteria used for performing the management review(s).
- Conditions under which corrective action will be implemented.

Note 1 - For Suppliers with only one location, these reviews may not be practical and therefore not performed. The Manufacturer's QMS shall state if Management Reviews are being performed and at what frequency.

X1.13

Corrective Action Procedures

The QSM will include procedures describing the actions taken when failures or nonconformities exist in any of the following areas:

- Product (as listed in X1.9)
- Equipment
- Internal and external audits
- Management reviews

These procedures shall indicate what position(s) or employee(s) are responsible for implementing corrective action and the methods used to identify and implement corrective action(s).