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**Standard Practice for**

**Qualification of Highway Product  
Manufacturers Through the Use of  
NTPEP Audits**

NTPEP Designation: [SP01] (2018)

National Transportation Product Evaluation Program  
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# Qualification of Highway Product Manufacturers Through the Use of NTPEP Audits

## NTPEP Designation: [SP01]

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### 1. SCOPE

- 1.1. This standard practice covers the auditing requirements and testing criteria for the National Transportation Product Evaluation Program (NTPEP) evaluation of highway materials for use on American Association of State Highway Officials (AASHTO) member department projects. This standard practice is intended to be used in conjunction with the applicable NTPEP Work Plan for conducting audits and testing.
- 1.2. The purpose of the program is to provide audit information from Manufacturers and products that comply with the quality control and product testing requirements of the NTPEP program. AASHTO member departments can then use this information in their quality assurance program for Manufacturer/product acceptance. This may include utilizing this information to establish a qualified Manufacturer list, a qualified products list, or both. By participating in this program, the Manufacturer agrees to produce product(s) that meet or exceed the requirements in the applicable AASHTO/ASTM Designation Standard (s) and follow the minimum quality control provisions of their quality program.
- 1.3. Testing of the Manufacturer's product(s) against the applicable standard(s) and auditing the Manufacturer's in-plant quality control facilities and procedures are included in this program. The Manufacturer agrees that NTPEP will use the test results and 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).
- 1.4. *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. At a minimum, NTPEP Auditors will utilize the personal protective equipment (PPE) as required by the Manufacturer when conducting audit evaluations. It is the responsibility of the Manufacturer to establish the appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

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### 2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standards:*
- R 18, Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories (Section 5)
  - 23 CFR 635.410 Buy America

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### 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. *Auditor* – A NTPEP representative who reviews submittals, coordinates auditing and testing, and reports audit findings.
- 3.3. *Audits* – Documented reviews of a Manufacturer’s plant and associated test facilities by a NTPEP Auditor.
- 3.4. *Calibration* – The documented operation performed on testing equipment that, under specified conditions, in a first step, establishes a relation between the quantity values with measurement uncertainties provided by measurement standards and corresponding indications with associated measurement uncertainties (of the calibrated instrument or secondary standard) and, in a second step, uses this information to establish a relation for obtaining a measurement result from an indication. [*as defined by the International Bureau of Weights and Measures*].
- 3.5. *Comparison Testing* – As required by the NTPEP Work Plan, random sample(s) selected by an Auditor from the manufacturing line or inventory and tested by the Manufacturer and the NTPEP Designated Laboratory. The results from both testing locations are then made available for AASHTO member department review and comparison.
- 3.6. *Competency* – The documented demonstration of the ability of testing technicians to perform a test after proper training is completed. This is to be performed annually (at a minimum).
- 3.7. *Conformance Testing* – As required by the NTPEP Work Plan, random sample(s) selected by an Auditor from the manufacturing line or inventory and only tested by the NTPEP Designated Laboratory. The results of this testing are then made available for AASHTO member department review.
- 3.8. *Independent Laboratory* – An outside laboratory that performs raw material or finished product tests for the Manufacturer. NTPEP reserves the right to audit the independent laboratory for the tests that are being performed for the Manufacturer.
- 3.9. *Initial Audit*- The first audit conducted at a Manufacturer, which has not had an audit conducted by NTPEP.
- 3.10. *Internal Review (Quality Audits)* - A documented review of a Manufacturer’s QSM implementation. This can be performed by anyone within the company, however, the person should be independent of the activity being audited. AASHTO R18 allows a laboratory to determine the frequency of review but at a minimum one should be conducted annually. This review measures the implementation of the quality system by answering the question: “*Is the Manufacturer actually doing what they state (in their quality system) they are doing?*”
- 3.11. *Management Review*- A documented review of a Manufacturer’s overall operations. This is performed by management and measures the effectiveness of the quality system by answering the question: “*Is what is currently being done effective and are the quality objectives being met?*” The review should be performed at least annually and whenever a technical complaint casts doubt on the quality of the Manufacturer’s work.
- 3.12. *Manufacturer*- An individual producer of the product(s) being evaluated. The corporate name and physical location will be included in the NTPEP program listings.

- 3.13. *Nonconformance* – Anything found to not meet the requirements of this standard practice or referenced documents.
- 3.14. *NTPEP (National Transportation Product Evaluation Program)* - The entity responsible for overseeing all areas of the NTPEP program in accordance with this Standard Practice.
- 3.15. *NTPEP Committee Work Plan* – An individualized document of the auditing requirements and testing criteria for a particular manufactured product that is part of the audit program within NTPEP.
- 3.16. *NTPEP Designated Laboratory* – A laboratory qualified by NTPEP to perform the specific tests, as outlined in the specific NTPEP Work Plan, with on-site qualified technicians and equipment necessary to perform the tests per the applicable AASHTO/ASTM Designation Standard(s).
- 3.17. *NTPEP Follow-Up Audit* - An audit of a Manufacturer’s location and associated laboratory which are included in the program. These audits are conducted by NTPEP and/or an AASHTO member department to determine compliance with the program requirements. These audits will be performed due to: an incomplete initial/annual audit where nonconformances are found, reports of noncompliant product from an AASHTO member department, or any other reason deemed significant to NTPEP.
- 3.18. *NTPEP Technical Committee* – A Committee comprised of AASHTO affiliated transportation agencies and Industry. These members are volunteers who are interested in the quality of the product(s). The Technical Committee appoints a Chair and a Vice Chair.
- 3.19. *QMS Desktop Audit* – A complete review of a Manufacturer’s Quality Management System (QMS) and the corresponding documentation by NTPEP or its designee.
- 3.20. *Quality Management System (QMS)* – The documented process used by the Manufacturer for quality control/quality assurance as referenced in AASHTO R 18, Section 5 and this standard.
- 3.21. *Standardization* – The process that determines the correction or adjustment to be applied to the result of a measuring instrument when its values are compared with that of an accepted standard. It is a simplified form of calibration that does not address all of the elements of uncertainty of measurement and does not lead to traceable measurements.
- 3.22. *Standard Usage Guide for NTPEP Audit Programs* - A guide intended to help all involved in the process to better understand the reasoning behind why certain materials are audited at the source of production, explain how the material is evaluated, and provide various ways of using the results for material acceptance. It is located on the NTPEP website.
- 3.23. *Surveillance Audit* - An audit of any Manufacturer’s plant and associated laboratory included in the program by AASHTO member departments to determine compliance with the program requirements.
- 3.24. *Training* – The documented process for improving the knowledge, skills, and abilities of testing technicians for performing the testing functions. It has specific starting and ending dates.
- 3.25. *Verification* – The documented inspection and/or measurement performed on testing equipment to indicate compliance with stated criteria.

Additional terminology can be found in the applicable AASHTO/ASTM Designation Standard(s).

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## 4. OVERVIEW OF THE PROGRAM

The program assesses the conformance of both manufacturing and products with this practice and includes the following:

- 4.1. Manufacturer's QMS Desktop Audit:
  - 4.1.1. A complete review of the Manufacturer's QMS is performed by NTPEP prior to the on-site audit. The requirements for this document are referenced in Section 6.
- 4.2. Initial and Annual NTPEP Audits:
  - 4.2.1. NTPEP will perform initial and annual quality control audits of each facility that a Manufacturer 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: QMS implementation, test reports, equipment calibration, verification of results, and check records. The NTPEP Auditor will conduct these audits assisted by co-auditor(s) from any AASHTO member department(s) that want to participate.
- 4.3. NTPEP Testing of Products:
  - 4.3.1. Random samples of the finished product will be selected by the NTPEP Auditor from production and/or inventory and tested for conformance with the applicable AASHTO/ASTM Designation Standard(s).
  - 4.3.2. Additional samples will also be obtained, as required by the NTPEP Work Plan, for comparison testing by the Manufacturer's testing facility.
- 4.4. The NTPEP DataMine Website Listing:
  - 4.4.1. A document library containing this Standard Practice and NTPEP Committee Work Plans along with a secure area where AASHTO member departments can view the Manufacturer's: QMS, audit results, Corrective Actions, and all comparison/conformance sample test results. DataMine shows each Manufacturer's status (compliant or otherwise) to this Standard Practice and the appropriate NTPEP Work Plan.
  - 4.4.2. Manufacturer's viewing rights are restricted to only the audit information from their facility. AASHTO member departments can view every Manufacturer's audit information.

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## 5. APPLICATION FOR AUDIT AND PRODUCT TESTING

- 5.1. Any Manufacturer of an audited product group may participate in the program. All costs for participation in the program, including sample shipping, testing and other NTPEP auditing and administrative fees, are to be borne by the Manufacturer. Any testing above and beyond the NTPEP program requirements will be at the expense of the AASHTO member departments or as provided in its specifications.
- 5.2. The Manufacturer will make a formal request through the NTPEP website to participate in the program. The request will list the Manufacturer's location(s) and products to be evaluated and describe the QMS (Log onto the following NTPEP website and follow the instructions):  
<http://www.ntpep.org/SubmitProdu>.

- 5.3. Once the QMS is found to conform, the Manufacturer and all associated testing facilities will be scheduled for an audit.
- 5.4. The on-site audit will be scheduled approximately 4 weeks in advance of the actual audit. The Manufacturer will receive an Announcement Letter from NTPEP giving notice of the anticipated date of the audit.

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## 6. QUALITY MANAGEMENT SYSTEM (QMS) REQUIREMENTS

- 6.1. NTPEP audits will be based on the Manufacturer following an established quality control program that provides assurance that the products meet the requirements of the applicable AASHTO/ASTM Designation Standard(s), the appropriate NTPEP Committee Work Plan, and to this NTPEP Standard Practice. The Manufacturer will implement their documented QMS to include elements that it considers necessary to assure their products meet the applicable AASHTO/ASTM Designation Standard(s). As a minimum the QMS will include or address the following:
- Organization and Organizational Policies
  - Quality Mission Statement
  - Position Descriptions
  - Quality Control Personnel Training and Competency Evaluation
  - Customer Feedback
  - Internal Quality Audits of Each Facility Producing Product(s)
  - Management Reviews of Each Facility Producing Product(s)
  - Corrective Action Procedures
  - Sampling Plan for Quality Control and Quality Assurance
  - Testing Plan for Quality Control and Quality Assurance
  - Retesting Plan for Quality Control and Quality Assurance
  - A List of Physical and Chemical Test Equipment
  - Lab Equipment Plan for Calibrating, Verifying, and Standardizing Equipment
  - Recording and Maintaining Product Information and Test Results
  - Handling Raw Material and Finished Product(s)
  - Quality Control Inspection
  - Labeling and Storage of Finished Product(s)
  - Control of Nonconforming Product(s)
- 6.1.1. *Organization and Organizational Policies* – The QMS will indicate the line of authority from the QC testing technicians to the QC manager, ensure that QC testing technicians have the authority to require corrective action, and ensure that the QC manager is independent of production management and of equal status.
- 6.1.2. *Quality Mission Statement* - The QMS will describe the Manufacturer’s mission and be endorsed by the Manufacturer’s Chief Executive Officer. It will also be made available to all employees.
- 6.1.3. *Position Descriptions* - The QMS will describe the duties associated with each position included on the organization chart. These descriptions will also include the required skills, education, and experience associated with each specific position and indicate the supervision exercised and received.
- 6.1.4. *Quality Control Personnel Training and Competency Evaluation* -
- 6.1.4.1 The QMS will ensure that:
- Manufacturer’s QC manager meets the requirements established by the Manufacturer;
  - QC manager qualifies technicians performing QC testing;

- QC personnel are familiar with the tests they perform; and
- QC personnel have sufficient authority to assure that corrective actions are carried out when necessary.

6.1.4.2 The QMS will describe the Manufacturer's QC technician qualification program. As a minimum the program will include:

- Training in the applicable AASHTO/ASTM Designation Standard(s), or Manufacturer test procedures, operation of equipment, the procedures to be used, calculations required, and reporting;
- Demonstration of competency in each required test;
- Demonstration of ability to properly document test results;
- Annual auditing of each technician's ability to satisfactorily perform the required tests; and
- Retraining when a test method is revised.

6.1.4.3 Training and competency reviews will be documented in such a way that compliance with the requirements for the initial and updated training and the initial and annual competency reviews can be provided for each technician and for each test the technician performs. The documentation will include the date of the training or competency review and contain the hand-written signature or initials of the trainer/reviewer and the technician. This documentation will be retained, for a minimum period of 5 years, at each location where quality control testing occurs, and will be made available to NTPEP for review upon request.

6.1.5. *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.

6.1.6. *Internal Quality Audits of Each Facility Producing Product* -

6.1.6.1 The QMS will include a description of the procedures used to conduct internal audits. The Manufacturer, or an independent auditor hired by the Manufacturer, 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 include the following as a minimum:

- What position(s) or employee(s) are responsible for ensuring the internal audits are performed;
- Frequency, scope, and criteria used for performing the audits;
- Conditions under which corrective action will be implemented;
- Evaluation of plant inspection;
- Inspection of testing equipment and calibrations, verifications and standardizations;
- Observation of raw material sampling and control procedures;
- Observation of product sampling and testing procedures;
- Review of product certification procedures;
- Review of inspection and testing report documentation; and
- Review of nonconforming product documentation and actions taken.

6.1.6.2 The QMS 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; and
- The most recent report is included in QMS documentation submissions.



- 6.1.7. *Management Reviews of Each Facility Producing Product* - The QMS will include written procedures for performing management reviews. The procedures should indicate the following:
- What positions(s) or employee(s) are responsible for ensuring that management reviews are performed;
  - The frequency, scope and criteria used for performing the management review(s); and
  - Conditions under which corrective action will be implemented.
- 6.1.8. *Corrective Action Procedures* - The QMS will include procedures describing the actions taken when failures or nonconformities exist in any of the following areas: product, equipment, internal and external audits, and management reviews. These procedures should indicate what position(s) or employee(s) are responsible for implementing corrective action and the methods used to identify and implement corrective action(s).
- 6.1.9. *Sampling Plan for Quality Control and Quality Assurance* - The QMS will include procedures describing sampling for quality control and quality assurance. These procedures should include the following details:
- Number and frequency of samples taken;
  - Sample selection process, including sampling required for retesting;
  - The position(s) or employee(s) responsible for sampling; and
  - Required sample preparation.
- 6.1.10. *Testing Plan for Quality Control and Quality Assurance* - The QMS will include procedures describing testing for quality control and quality assurance. These procedures should include the following details:
- Number of samples required for testing;
  - Tests required to be performed;
  - The position(s) or employee(s) responsible for testing;
  - How test results are interpreted;
  - The position(s) or employee(s) responsible for approving test results; and
  - Criteria and procedures for retesting.
- 6.1.11. *Retesting Plan for Quality Control and Quality Assurance* - The QMS will include procedures describing retesting for quality control and quality assurance. These procedures should include the following details:
- When retesting is performed;
  - Retest sampling requirements;
  - Special retesting conditions;
  - Criteria for acceptance of test results; and
  - Instructions for reporting original test results and retest results.
- 6.1.12. *A List of Physical and Chemical Test Equipment* - The QMS will include a list(s) giving a general description of physical and chemical test equipment requiring standardization or checks. The following information will be included for each piece of equipment:
- Interval between standardization or check;
  - Reference to standardization or check procedure; and
  - Location of standardization or check record.
- 6.1.13. *Lab Equipment Plan for Calibration, Verification, and Standardization of Equipment* - The QMS will include written procedures for ensuring that equipment calibrations, verifications, and

standardization are performed for all required equipment at the specified intervals (Ref.: Annex A.1). Where the referenced specifications do not state a frequency, the minimums shown in Annex A will apply. These procedures should indicate the following:

- Position(s) or employee(s) responsible for calibration, verification and standardization activities;
- Procedures for handling equipment which is newly acquired, removed from service, or does not meet accuracy requirements;
- In-house equipment calibration, verification and standardization procedures, when they cannot be referenced in applicable standards; Certificates or other documents that establish traceability of in-house equipment or reference standards used for calibration, verification and standardization; and
- Speed of testing for each type of load test: (1) in terms of free running crosshead speed (rate of movement of the crosshead of the testing machine when not under load), (2) in terms of rate of separation of the two heads of the testing machine under load, (3) in terms of rate of stressing the specimen, or (4) in terms of rate of straining the specimen.

6.1.14. *Recording and Maintaining Product Information and Test Results* - The QMS will include written procedures used to produce, check and amend test reports. These procedures should include the following details:

- Identify position(s) or employee(s) responsible for maintaining testing information;
- Describe distribution of testing information;
- Identify location of testing information; and
- Process for maintaining the above referenced information for a minimum period of 5 years and how they are made available to NTPEP for review.

6.1.15. *Handling Raw Materials Use* - The QMS will include a written procedure for documenting origin of materials. It will also include the records retention for all documentation (certifications, test reports, worksheets, etc.) associated with materials, testing, and inspections. NTPEP Committee Work Plans will list the minimum retention time, but where none is shown, 5 years will be required.

6.1.15.1 The QMS will include a written procedure for documenting traceability of steel and iron materials (Ref.: 23 CFR 635.410 Buy America requirements).

*Note 1 - Buy America requirements may vary from state to state and it is the responsibility of the Manufacturer to comply with the requirements for each state transportation agency to which the Manufacturer provides product.*

6.1.16. *Quality Control Testing Plan*- The QMS will define the quality control tests, the method for random sampling, the size of the sample, and the heat/lot/batch/etc. quantity for production facility quality control sampling and testing. The QMS will also include an example of a quality control test report form. The QMS will reference the applicable AASHTO/ASTM Designation Standard(s), or in-house procedures and calibrations. The QMS will describe any Manufacturer procedure used.

*Note 2 - The Manufacturer's procedures are subject to approval. The Manufacturer's test procedures which pertain to the tests providing useful information to evaluate the product are included in this requirement.*

6.1.16.1 The QMS will include a description of the Manufacturer's statistical process control plan. The plan will use methods such as statistical control charts to monitor production facility quality control test results for the purpose of identifying trends and being able to make production

adjustments as necessary. The plan will monitor each production plant separately and total Manufacturer product quality trends.

- 6.1.16.2 The QMS will require that the Manufacturer perform and record the results of at least the quality control measurements and tests listed in the governing AASHTO/ASTM Designation Standard(s) at the minimum frequency indicated in the specification or the NTPEP Committee Work Plan.
- 6.1.16.3 The QMS will ensure that:
- Each sample selected for quality control inspection and testing is designated with a sample control number for record keeping and traceability;
  - The test report for each sample identifies the plant, date, and heat/lot/batch/etc. designation; and
  - Quality control test reports are maintained and available for review for 5 years.
- 6.1.16.4 The QMS will ensure that QC testing facility:
- Maintains current versions of all applicable AASHTO/ASTM Designation Standard(s), and Company test procedures for all tests performed and a current version of the Company's QMS documentation;
  - Adequately houses and allows proper operation of all required testing equipment; and
  - Maintains records of all NTPEP reviews and actions taken to resolve any noted deficiencies.
  - Performs calibrations and verifications on testing equipment in accordance with the Manufacturer's recommendations, but at least at the specified intervals (Ref.: Annex A.1). These activities will be performed by the individuals who routinely use the equipment and are familiar with its use or by technicians of an accredited calibration/verification facility familiar with the equipment.
- 6.1.16.5 The QMS will describe in detail the requirements for the QC test facility(ies) and include, as a minimum, a description of how the Manufacturer will cover QC responsibilities at all times, including when the QC Manager is away from the plant for any reason.
- 6.1.16.6 The Manufacturer's QC manager will be responsible for routine QC testing at all facilities and assure that all sampling and testing is done by technicians meeting the requirements of the Manufacturer's technician qualification program. In the event the Manufacturer utilizes an independent laboratory for routine QC testing, the independent laboratory will be NTPEP compliant.
- 6.1.16.7 The Manufacturer's QC manager will be responsible for QC testing at all facilities and assure that all sampling and testing is done by technicians meeting the requirements of the Manufacturer's technician qualification program. In the event the Manufacturer utilizes an independent laboratory for testing, the independent laboratory will need to be evaluated by NTPEP and found compliant.
- 6.1.17. *Labeling and Storage of Finished Product* - The QMS will include a written procedure describing how finished product is labeled, packaged and stored. It will also include an explanation of the product markings used by the Manufacturer.
- 6.1.18. *Control of Nonconforming Product* - The QMS will include written procedures describing the actions to take when product does not conform to the specification requirements. These procedures should include the following details:
- What position(s) or employee(s) is responsible for making decisions related to nonconforming product;
  - How nonconforming product is identified, labeled and segregated;
  - What happens in the event it is shipped;

- What is done with the nonconforming product;
- Who is responsible for taking corrective action
- How test reports clearly identify the deficiencies;
- How products produced subsequent to the previous testing, are identified and quarantined pending investigation of the failure; and
- The process for obtaining and testing check samples.

6.2. In the event the Manufacturer 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 above. The QMS will also contain the required information for the independent laboratory location.

6.3. After the initial audit, a complete desktop review will be performed every 5 years or as designated in the specific work plan. Updates made to the QMS within the previous 12 months will be required to be sent to AASHTO annually during the application process. A complete review of the QMS will be required when a Manufacturer:

6.3.1. Is removed from the program, reapplies for participation, or

6.3.2. Applies for participation after not participating in the program for two or more consecutive years.

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## 7. NTPEP ON-SITE AUDITS

7.1. *The NTPEP Audit Team* - The NTPEP audit team will consist of a NTPEP Auditor and may include an AASHTO Member Department co-auditor(s) from any state invited to participate in the on-site audit. The NTPEP Auditor will produce a single audit report, which will include findings from both the NTPEP Auditor and AASHTO Member Department co-auditor(s), if present.

7.2. *Initial/Annual Audit* - Once the QMS is found to conform, the specific location the Manufacturer desires to qualify will be audited. The on-site audits will include the following:

7.2.1. Documentation Review - The Auditor(s) will check the current edition of the applicable AASHTO/ASTM Designation Standard(s), the NTPEP Work Plan and this Standard Practice, review training and competency records, and evaluate the most current Quality Manual documentation and equipment records to verify implementation of the plant's QMS.

7.2.2. Production Inspection - During the production line inspection, the Auditor(s) will walk through the manufacturing process to observe the conditions of the lines. During this process, the Auditor will identify samples to be collected for comparison sample testing purposes.

7.2.3. Storage Yard Inspection - The auditor(s) will inspect the condition of product in the Manufacturer's yard/storage facility.

7.2.4. Quality Control Testing Evaluation - Each Manufacturer will be asked to demonstrate the quality control tests they perform as stated in their QMS. While performing each test, the most current AASHTO/ASTM Designation Standard(s) will be referenced along with in-house procedures. The equipment used for each test will be examined and applicable calibration records will be reviewed.

7.2.5. Testing of Products – Samples will be designated by the auditor(s) and will include a variety of heat/lot/batch/etc. and sizes available at the time of the audit. All sampling and testing will be in accordance with the applicable AASHTO/ASTM Designation Standard(s) or the minimum frequency indicated in the specification or the NTPEP Committee Work Plan. The samples will

be for testing by the NTPEP Designated Laboratory. If required by the NTPEP Committee Work Plan, Manufacturer samples will be tested by the Manufacturer's testing facility.

- 7.3. *NTPEP Follow-Up Visits and Testing* – NTPEP follow-up visits and audits to a Manufacturer's location and associated laboratory (if applicable) included in the program, may be conducted to determine compliance with the program requirements. These visits may not necessarily be announced. They may also randomly select samples of product to be tested in accordance with the applicable AASHTO/ASTM Designation Standard(s).

*Note 3 - If major deficiencies are noted during an on-site audit, an investigation into the issue(s) will be conducted by the Manufacturer and all non-conformances will require resolution in accordance with Section 9. A follow-up audit will be required and may be unannounced regardless of the availability of key QC staff. The results of this audit will be furnished to the applicable NTPEP Committee.*

- 7.4. *AASHTO Member Department Surveillance Visits and Testing* - AASHTO member departments using the NTPEP listing have the right to conduct their own surveillance visits and audit any Manufacturer's location and associated laboratory included in the program to determine compliance with the program requirements. These visits may not necessarily be announced. They will also randomly select samples of product to be tested in accordance with the applicable AASHTO/ASTM Designation Standard(s). The cost of any additional testing (above and beyond what is required by the NTPEP program requirements) will be at the AASHTO Member's Department expense or as provided in its specifications.

*Note 4 -If major deficiencies are noted during a surveillance audit, the results of the audit will be forwarded to NTPEP.*

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## **8. ANNUAL TESTING OF PRODUCTS**

- 8.1. The NTPEP program requires that random product samples be tested for conformance with the applicable AASHTO/ASTM Designation Standard(s) during the annual audit.
- 8.2. The NTPEP Auditor, or their representative, will select samples during each annual Manufacturer audit for testing by the NTPEP Designated Laboratory. Based upon the NTPEP Committee Work Plan requirements, an additional set will be tested by the Manufacturer.
- 8.2.1. NTPEP Designated Laboratory Samples:
- 8.2.1.1 These samples will be taken as required by the NTPEP Committee Work Plan or directed by the NTPEP Auditor.
- 8.2.2. Manufacturer Samples:
- 8.2.2.1 When Manufacturer samples are required by the NTPEP Committee Work Plan, these samples will be located adjacent to the previous (NTPEP) samples and from the same heat/lot/batch/etc. The Manufacturer will perform the testing of their samples and report the results from their testing using the standard format provided by NTPEP within the calendar day limits of the NTPEP Committee Work Plan. If the Manufacturer does not have capability to perform the testing, the comparison samples may be tested at an independent NTPEP compliant laboratory, preferably not at the same laboratory testing the NTPEP portion of the comparison sample. Testing for product conformance performed by an independent laboratory, on behalf of the Manufacturer, may be witnessed by the Auditor.

- 8.2.3. Retest Samples:
- 8.2.3.1 Additional material is obtained from the same heat/lot/batch/etc. as part of the NTPEP Designated Laboratory samples. This additional material is used for verification of any failing/invalid test specimens.
- 8.2.4. Shipment of Samples:
- 8.2.4.1 The NTPEP Auditor, or their representative, will instruct the Manufacturer on the proper labeling of the product conformance samples. The Manufacturer will send (freight paid by the Manufacturer) the product conformance samples to the NTPEP Designated Laboratory for testing. Proper care (packaging, identification, tracking, etc.) to limit damage or loss of the sample shipment is the responsibility of the Manufacturer. Loss or damage of the samples will require re-sampling and testing at the Manufacturer's expense.
- 8.2.5. Posting of Test Results:
- 8.2.5.1 The results from the NTPEP Designated Laboratory testing are posted in the secure area of the NTPEP website, available only to AASHTO member departments and the personnel of the Manufacturer where the samples were tested. The reports are furnished for use by the AASHTO member department and the *Standard Usage Guide for NTPEP Audit Programs* explains parameters used in determining consistency of testing. When required by the NTPEP Committee Work Plan, the results from Manufacturer tested samples will also be posted.
- 8.2.5.2 The test results are used by NTPEP to determine whether the Manufacturer is "Compliant" with the program. Non-conformances, found during testing, will require resolution in accordance with Section 9.

*Note 5 – If at least one tested sample fails to meet specification requirements, an investigation into the issue(s) will be conducted by the Manufacturer and the results, in the form of a Corrective Action Report (CAR), will be furnished to the applicable NTPEP Committee.*

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## 9. RESOLUTION OF TESTING/AUDIT NONCONFORMANCES AND DISPUTES

- 9.1 When a designated sample does not meet one or more of the requirements when tested, or when the Manufacturer is found during an audit to not conform with one or more aspects of the governing QMS, then the burden is on the Manufacturer to identify the cause, correct the issue, document the resolution, and revise their QMS to assure future conformance. All testing and audit results are reported, along with any Corrective Actions, to NTPEP.
- 9.2 Samples, tested by the Manufacturer, that do not meet one or more of the specification requirements are handled as follows:
- 9.2.1 The Manufacturer will verify that the manufacturing process is operating correctly, that test equipment is calibrated and operating correctly, and that test procedures are correct. This investigation will be documented and the results sent to NTPEP. In addition, the Manufacturer will validate their results by testing additional samples from the same heat/lot/batch/etc. as the nonconforming test. The results of this testing will be sent to the Auditor along with the response to the Corrective Action generated as the result of the nonconforming test result(s).

9.2.2 Another set of samples will be selected by NTPEP for testing by the Manufacturer and the NTPEP Designated Laboratory. If the Manufacturer's and the NTPEP Designated Laboratory's test results on the second sample are satisfactory, NTPEP will consider the issue resolved. If this is not the case, the Manufacturer will investigate the cause of the nonconforming test and report the findings. The results of the Manufacturer's investigation and test results will be sent to the NTPEP Auditor for distribution to the committee chair and vice-chair for review whose decision will be final.

9.2.3 Any additional retesting or re-auditing will be at the discretion of NTPEP and the associated costs will be borne by the Manufacturer. All results will be posted in the secure area of the NTPEP website, available only to AASHTO member departments and the Manufacturer's personnel.

*Note 6 –Inconsistency in results may result in the need for a NTPEP follow-up audit.*

9.3 When a nonconformance is found during an audit, the burden will be on the Manufacturer to identify the cause; develop, implement and document the resolution; and revise his QMS to assure future conformance. When the Manufacturer is found to not conform with one or more aspects of the governing QMS, it is handled as follows:

9.3.1 The NTPEP Auditor notifies the Manufacturer of the issue(s).

9.3.2 The Manufacturer furnishes a Corrective Action Report (CAR) to AASHTO (within 15 business days of notification) to the NTPEP Auditor. The CAR is to contain: the issue being addressed, the course(s) of action to be taken and a timeline showing when these actions will be taken. Sufficient detail to adequately explain the processes used by the Manufacturer must be included with the CAR.

9.3.3 If the CAR is not received within 15 business days, NTPEP notifies the Manufacturer that their facility is classified as "non-compliant" with AASHTO's NTPEP Audit Program. The audit is considered completed and all fees paid will not be refunded.

9.3.4 If the Manufacturer has been found "non-compliant" and later requests to participate in the program, they will need to reapply (Ref.: Section 5). Any outstanding CAR's will need to be addressed before consideration of the application.

9.4 When the Manufacturer has a dispute with NTPEP regarding procedural issues, it is handled as follows:

9.4.1 The Manufacturer notifies NTPEP in writing of the dispute, providing appropriate documentation for the NTPEP Technical Committee to fully understand the controversy, and requests a resolution. Copies of the dispute and documentation are forwarded by NTPEP to the Technical Committee Chair and Vice-Chair and NTPEP Technical Committee Liaison. The Technical Committee, less industry representatives, will convene to discuss the dispute and render a decision on the appropriate resolution. Quorum for the purposes of this decision will be either the Chairman or Vice-Chairman, the NTPEP liaison or his/her designee, and one other Technical Committee member. The Chair or Vice-Chair will communicate the resolution to the Manufacturer in writing through NTPEP.

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## 10. REPORTING OF DATA

10.1 NTPEP maintains the results of the audit and testing on their website (<http://data.ntpep.org>) in the DataMine database. NTPEP will also publish a list showing which Manufacturer locations are compliant with the requirements of this Standard Practice. Each AASHTO Member Department

then determines whether the Manufacturers are approved or not in their state based upon their established criteria (Ref.: the particular AASHTO Member Department's specification).

10.2 NTPEP will post the sample test results in the secure area of the NTPEP website. The results are available only to AASHTO member departments and the Manufacturer's personnel.

10.3 **Public Notice** - One of the primary reasons for using an audit program is to provide the end-user of the manufactured materials with some of the necessary information to assist in their evaluation and acceptance of the Manufacturer. Audit evaluations of the Manufacturer's quality control system, help the end-user determine if the Manufacturer is capable of producing products to an established minimum level of quality. This program provides information on Manufacturers found to conform to the provisions of this Standard Practice and the applicable NTPEP Work Plan through public notice (via the NTPEP DataMine website posting) of their audit information.

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## 11. MANUFACTURER DISQUALIFICATION

11.1 Manufacturers will ensure all participating locations, associated quality control testing facilities, personnel, and sampling and testing activities are in continuous conformance with the NTPEP requirements.

11.2 NTPEP, based on results of their audits or the acceptance of other testing done by Member Departments, will rescind a Manufacturer's listing if a facility is determined not to comply with the NTPEP requirements.

11.3 The NTPEP Associate Program Manager will forward a letter of explanation to the affected Manufacturer and notify all AASHTO member departments detailing the reason(s) for revocation of the compliance status. The NTPEP Associate Program Manager will coordinate any appeals of such revocation.

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## 12. RESUBMITTAL TESTING FREQUENCY

12.1 Product design can change over time as Manufacturers improve their products and optimize their manufacturing processes. When a design change is made to any NTPEP audited product, the Manufacturer will notify NTPEP of the change and submit samples for re-consideration of conformance with this Standard Practice.

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## 13. KEYWORDS

13.1 NTPEP; Manufacturer; AASHTO Member Department



## ANNEXES (MANDATORY INFORMATION)

### A.1 MINIMUM REQUIREMENTS FOR CALIBRATION, VERIFICATION, AND STANDARDIZATION OF LABORATORY EQUIPMENT

**Manufacturers' Responsibilities:**

Participating Manufacturer's Quality Management System (QMS) will include documented calibration, verification, and standardization frequencies as shown below. Where the referenced specifications do not state a calibration, verification, or standardization frequency, a minimum of once a year will apply.

Measurement Standard (Equipment)	Calibration * Frequency (Minimum)	Verification ** Frequency (Minimum)	Standardization *** Frequency (Minimum)
Parallel Plate Test Machine	Annually <sup>(1)</sup>		
Ultrasonic Gauge	Annually <sup>(1)</sup>	Prior to Use <sup>(2)</sup>	
Ultrasonic Transducer	Annually <sup>(1)</sup>	Prior to Use <sup>(2)</sup>	
Melt Index Heater			Annually <sup>(1)</sup>
Muffle Furnace			Annually <sup>(1)</sup>
Temperature Measuring Device			Annually <sup>(1)</sup>
Tension Test Machine	Annually <sup>(1)</sup>		
Extensometer	Annually <sup>(1)</sup>		
Elongation Punching Device		Prior to Use <sup>(2)</sup>	
Elongation Measuring Device		Prior to Use <sup>(2)</sup>	
Deformation Measuring Device		Prior to Use <sup>(2)</sup>	
Bending Pins		Annually <sup>(1)</sup>	
Chemical Analysis Device			Prior to Use <sup>(2)</sup>
Standard Blocks, Shims, Weights	5 Years <sup>(3)</sup>		
Balances and Scales		Prior to Use <sup>(2)</sup>	
Calipers		Prior to Use <sup>(2)</sup>	
Micrometers		Prior to Use <sup>(2)</sup>	

<sup>(1)</sup>“Annually” – Not more than one year (12 months) from the previous calibration/standardization

<sup>(2)</sup> “Prior to Use” – Documented verification checks performed before the use of the equipment to verify it is operating properly, The frequency will be set and defined by the Manufacturer in their QMS to minimize the amount of potentially unacceptable product based upon faulty inspection/testing equipment.

<sup>(3)</sup>“5 Years” - Not more than five years (60 months) from the previous calibration

\* **Calibration** – Generally performed by a Commercial Calibration Agency.

\*\* **Verification** – Verifications are performed in-house.

\*\*\* **Standardization** – Standardizations are performed in-house.