



## Federal-Aid Policy Guide

July 19, 2006, [Transmittal 36](#)

NS 23 CFR 637B

### Non-Regulatory Supplement

OPI: HIPT

1. **POLICY (23 CFR 637.205).** The Division Administrator shall provide appropriate oversight to ensure that the State's quality assurance program is being implemented as approved. At a minimum the oversight should cover:
  - a. Materials sampling and testing issues,
  - b. Construction inspection issues covering the specific attributes which reflect the quality of the finished product, and
  - c. State capabilities – maintaining an adequate, qualified staff to administer the quality assurance program and qualified laboratories.
  
2. **QUALITY ASSURANCE PROGRAM (23 CFR 637.207)**
  - a. The State's acceptance program should provide a reasonable level of inspection to adequately assess the specific attributes which reflect the quality of the finished product. Acceptance inspection should include inspection of the component materials at the time of placement or installation, as well as the workmanship and quality of the finished product.
  - b. Samples used in the acceptance decision should be taken as close as possible to where the material is incorporated into the project.
  - c. The State should retain control of the verification sampling locations and timing until immediately prior to sampling.
  - d. Sampling and testing frequencies may vary from State to State as the quality and uniformity of the material varies. The State may reduce its testing frequency for materials with a history of accurate, uniform test results that consistently meet specification requirements. The rate of testing should be higher on newly developed material sources, sources with questionable quality, sources with a wide range of test results, and sources with failing test results.
  - e. When contractor's tests are used in the acceptance decision and the State and contractor test results do not compare, the frequency of verification testing should be increased.
  - f. The State should obtain the contractor's test data as soon as it is available, no later than 24 hours after sampling is completed. The State's test results should not be given to the contractor until after the contractor results are received.
  - g. The State should review the contractor's source documentation as part of the State's quality assurance program.
  - h. Test results should not be discarded unless it is known that the sampling or testing was

flawed. It may be appropriate to perform additional testing when the quality of the material is in question. However, in cases where additional tests are performed, the acceptance and pay criteria need to be adjusted to account for the additional test results.

- i. If project materials are used in the Independent Assurance (IA) program, the IA samples should be split samples when possible, or in close proximity to the same location as the samples used in the acceptance decision.
- j. Observation of sampling and testing procedures should be included as part of an IA system to evaluate sampling and testing personnel and ensure that test procedures are performed correctly.
- k. When using the project approach for IA, the frequency should be approximately 10 percent of the frequency of the tests used in the acceptance decision.
- l. When using the system approach for IA, each inspector should be covered once or twice a year.
- m. The State is encouraged to develop a Qualified Products List for manufactured materials.
- n. The State is encouraged to perform a risk analysis when developing an acceptance program for manufactured items. When performing a risk analysis, the State should consider the use of the product, safety, cost, and historical quality of the product.
- o. The State should consider the data from the National Transportation Product Evaluation Program (NTPEP) when developing qualified product lists. See <http://www.ntpep.org/>.
- p. The State is encouraged to report the evaluation of new products to the American Association of State Highway and Transportation Officials Product Evaluation List (APEL). See <http://apel.transportation.org/>.
- q. The State should consider visual inspection and/or the manufacturer's certification as a basis for accepting small quantities of non-critical material.

### 3. LABORATORY AND SAMPLING AND TESTING PERSONNEL QUALIFICATION (23 CFR 637.209)

- a. All test procedures used in the acceptance decision should be in the scope of accreditation for the States central laboratory.
- b. The National Cooperation for Laboratory Accreditation (NACLA) "Recognition Procedure" and the National Institute of Standards and Technology (NIST) Interagency Report 7012 (NISTIR 7012), "Technical Requirements for Construction Materials Testing", is the criteria required for the approval of comparable laboratory accreditation programs as indicated in a Notice in the Federal Register on September 22, 2004. The accreditation bodies will be evaluated against the NACLA Recognition Procedure and the Technical Requirements for Construction Materials Testing, and they must be recognized by NACLA with the Technical Requirements for Construction Materials Testing listed within its scope before the accreditation bodies will be approved by the Federal Highway Administration (FHWA). To meet the quality assurance requirements in 23 CFR 637.209(a)(2), (3), and (4), the laboratories' scope of accreditation must indicate that the laboratory was assessed according to the requirements in NISTIR 7012. The NACLA Recognition Procedure is available at <http://www.nacla.net/Pdf/Evaluation%20Procedure%20RevA.pdf>. The Technical Requirements for Construction Materials Testing is available at <http://ts.nist.gov/ts/htdocs/210/gsig/pubs/ir7012.pdf>.
- c. The following should be used as guidance for reviewing and revising laboratory qualification programs for non-accredited laboratories that provide test results and information used in

the acceptance decision:

(1) **Personnel**

(a) **Supervisors.** Supervisors of testing personnel should have a minimum of 3 years experience in testing of highway construction materials.

(b) **Technicians.** Guidance for technician qualification programs is listed in paragraph 3d.

(2) **Documentation.** State DOT's should develop test procedures and/or test manuals referencing standard testing procedures. These procedures should also cover handling, identification, conditioning, storage, retention and disposal of test samples.

(3) **Proficiency In Testing.** Testing personnel should be routinely evaluated by observations and split samples or proficiency samples.

(4) **Frequency of Assessments**

(a) Laboratory assessments should be made on a 3- to 5-year cycle.

(b) Data from the IA program along with observations during IA tests should be used as part of the ongoing evaluation of the laboratory.

d. The following should be used as guidance for reviewing and revising a technician qualification program:

(1) Formal training of personnel including all sampling and testing procedures with instructions on the importance of proper procedures and the significance of test results.

(2) Hands-on training to demonstrate proficiency of all sampling and testing to be performed.

(3) A period of on-the-job training with a qualified individual to assure familiarity with State DOT procedures.

(4) A written examination and demonstrated proficiency of the various sampling and testing methods.

(5) Requalification at 3- to 5-year intervals (data from the IA program can be used as one element of requalification).

(6) A documented process for retraining or removing personnel that perform the sampling and testing procedures incorrectly.

(7) The following are not appropriate criteria for achieving or maintaining qualification status: Grandfathering, the acceptance of a Professional Engineer or Engineer-in-Training certificate, or lifetime qualification.

4. **MATERIALS CERTIFICATE (23 CFR 637 APPENDIX A).** The intent of the material certification is to ensure that the quality of all materials incorporated into the project is in conformance with the plans and specifications, thus ensuring a service life equivalent to the design life. Any material represented by an acceptance test that does not meet the criteria contained in the plans and specifications is considered an exception. Exceptions should be investigated to determine if in fact the material is in reasonably close conformity with the plans and specifications.



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