

APPENDIX D

CODE OF FEDERAL REGULATIONS
23 CFR 637, SUBPART B
“QUALITY ASSURANCE PROCEDURES
FOR CONSTRUCTION”

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“Quality Assurance Procedures for Construction”

April 1, 2013

§ 637.201 Purpose.

To prescribe policies, procedures, and guidelines to assure the quality of materials and construction in all Federal-aid highway projects on the National Highway System.

§ 637.203 Definitions.

Acceptance program. All factors that comprise the State transportation department's (STD) determination of the quality of the product as specified in the contract requirements. These factors include verification sampling, testing, and inspection and may include results of quality control sampling and testing.

Independent assurance program. Activities that are an unbiased and independent evaluation of all the sampling and testing procedures used in the acceptance program. Test procedures used in the acceptance program which are performed in the STD's central laboratory would not be covered by an independent assurance program.

Proficiency samples. Homogeneous samples that are distributed and tested by two or more laboratories. The test results are compared to assure that the laboratories are obtaining the same results.

Qualified laboratories. Laboratories that are capable as defined by appropriate programs established by each STD. As a minimum, the qualification program shall include provisions for checking test equipment and the laboratory shall keep records of calibration checks.

Qualified sampling and testing personnel. Personnel who are capable as defined by appropriate programs established by each STD.

Quality assurance. All those planned and systematic actions necessary to provide confidence that a product or service will satisfy given requirements for quality.

Quality control. All contractor/vendor operational techniques and activities that are performed or conducted to fulfill the contract requirements.

Random sample. A sample drawn from a lot in which each increment in the lot has an equal probability of being chosen.

Vendor. A supplier of project-produced material that is not the contractor.

Verification sampling and testing. Sampling and testing performed to validate the quality of the product.

§637.205 Policy.

(a) *Quality assurance program.* Each STD shall develop a quality assurance program which will assure that the materials and workmanship incorporated into each Federal-aid highway construction project on the NHS are in conformity with the requirements of the approved plans and specifications, including approved changes. The program must meet the criteria in §637.207 and be approved by the FHWA.

(b) *STD capabilities.* The STD shall maintain an adequate, qualified staff to administer its quality assurance program. The State shall also maintain a central laboratory. The State's central laboratory shall meet the requirements in §637.209(a)(2).

(c) *Independent assurance program.* Independent assurance samples and tests or other procedures shall be performed by qualified sampling and testing personnel employed by the STD or its designated agent.

(d) *Verification sampling and testing.* The verification sampling and testing are to be performed by qualified testing personnel employed by the STD or its designated agent, excluding the contractor and vendor.

(e) *Random samples.* All samples used for quality control and verification sampling and testing shall be random samples.

§637.207 Quality assurance program.

(a) Each STD's quality assurance program shall provide for an acceptance program and an independent assurance (IA) program consisting of the following:

(1) Acceptance program.

(i) Each STD's acceptance program shall consist of the following:

(A) Frequency guide schedules for verification sampling and testing which will give general guidance to personnel responsible for the program and allow adaptation to specific project conditions and needs.

(B) Identification of the specific location in the construction or production operation at which verification sampling and testing is to be accomplished.

(C) Identification of the specific attributes to be inspected which reflect the quality of the finished product.

(ii) Quality control sampling and testing results may be used as part of the acceptance decision provided that:

(A) The sampling and testing has been performed by qualified laboratories and qualified sampling and testing personnel.

(B) The quality of the material has been validated by the verification sampling and testing. The verification testing shall be performed on samples that are taken independently of the quality control samples.

(C) The quality control sampling and testing is evaluated by an IA program.

(iii) If the results from the quality control sampling and testing are used in the acceptance program, the STD shall establish a dispute resolution system. The dispute resolution system shall address the resolution of discrepancies occurring between the verification sampling and testing and the quality control sampling and testing. The dispute resolution system may be administered entirely within the STD.

(iv) In the case of a design-build project on the National Highway System, warranties may be used where appropriate. See 23 CFR 635.413(e) for specific requirements.

(2) The IA program shall evaluate the qualified sampling and testing personnel and the testing equipment. The program shall cover sampling procedures, testing procedures, and testing equipment. Each IA program shall include a schedule of frequency for IA evaluation. The schedule may be established based on either a project basis or a system basis. The frequency can be based on either a unit of production or on a unit of time.

(i) The testing equipment shall be evaluated by using one or more of the following: Calibration checks, split samples, or proficiency samples.

(ii) Testing personnel shall be evaluated by observations and split samples or proficiency samples.

(iii) A prompt comparison and documentation shall be made of test results obtained by the tester being evaluated and the IA tester. The STD shall develop guidelines including tolerance limits for the comparison of test results.

(iv) If the STD uses the system approach to the IA program, the STD shall provide an annual report to the FHWA summarizing the results of the IA program.

(3) The preparation of a materials certification, conforming in substance to Appendix A of this subpart, shall be submitted to the FHWA Division Administrator for each construction project which is subject to FHWA construction oversight activities.

(b) In the case of a design-build project funded under title 23, U.S. Code, the STD's quality assurance program should consider the specific contractual needs of the design-build project. All provisions of paragraph (a) of this section are applicable to design-build projects. In addition, the quality assurance program may include the following:

(1) Reliance on a combination of contractual provisions and acceptance methods;

(2) Reliance on quality control sampling and testing as part of the acceptance decision, provided that adequate verification of the design-builder's quality control sampling and testing is performed to ensure that the design-builder is providing the quality of materials and construction required by the contract documents.

(3) Contractual provisions which require the operation of the completed facility for a specific time period.

[60 FR 33717, June 29, 1995, as amended at 67 FR 75934, Dec. 10, 2002]

§637.209 Laboratory and sampling and testing personnel qualifications.

(a) Laboratories.

(1) After June 29, 2000, all contractor, vendor, and STD testing used in the acceptance decision shall be performed by qualified laboratories.

(2) After June 30, 1997, each STD shall have its central laboratory accredited by the AASHTO Accreditation Program or a comparable laboratory accreditation program approved by the FHWA.

(3) After June 29, 2000, any non-STD designated laboratory which performs IA sampling and testing shall be accredited in the testing to be performed by the AASHTO Accreditation Program or a comparable laboratory accreditation program approved by the FHWA.

(4) After June 29, 2000, any non-STD laboratory that is used in dispute resolution sampling and testing shall be accredited in the testing to be performed by the AASHTO Accreditation Program or a comparable laboratory accreditation program approved by the FHWA.

(5) After September 24, 2009, laboratories that perform crash testing for acceptance of roadside hardware by the FHWA shall be accredited by a laboratory accreditation body that is recognized by the National Cooperation for Laboratory Accreditation (NACLA), is a signatory to the Asia Pacific Laboratory Accreditation Cooperation (APLAC) Mutual Recognition Arrangement (MRA), is a signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA), or another accreditation body acceptable to FHWA.

(b) Sampling and testing personnel. After June 29, 2000, all sampling and testing data to be used in the acceptance decision or the IA program shall be executed by qualified sampling and testing personnel.

(c) Conflict of interest. In order to avoid an appearance of a conflict of interest, any qualified non-STD laboratory shall perform only one of the following types of testing on the same project: Verification testing, quality control testing, IA testing, or dispute resolution testing.

[60 FR 33717, June 29, 1995, as amended at 72 FR 54212, Sept. 24, 2007]

Appendix A to Subpart B of Part 637—Guide Letter of Certification by State Engineer

Date _____
Project No. _____

This is to certify that:

The results of the tests used in the acceptance program indicate that the materials incorporated in the construction work, and the construction operations controlled by sampling and testing, were in conformity with the approved plans and specifications. (The following sentence should be added if the IA testing frequencies are based on project quantities. All independent assurance samples and tests are within tolerance limits of the samples and tests that are used in the acceptance program.)

Exceptions to the plans and specifications are explained on the back hereof (or on attached sheet).

Director of STD Laboratory
or other appropriate STD Official.