NIST HANDBOOK 150-5 CHECKLIST

CONSTRUCTION MATERIALS TESTING

Instructions to the Assessor: This checklist addresses specific accreditation criteria prescribed in NIST Handbook 150-5, Construction Materials Testing (CTS). Included also are instructions and comments sheets used for observing actual demonstrations of the performance of selected test methods. These criteria do not supersede the *Criteria for Accreditation* based on NIST Handbook 150, which are addressed in the NIST Handbook 150 Checklist.

Place an "X" beside any of the following items that represent a nonconformity. Place a "C" beside each item on which you are commenting for other reasons. Record the item number and your nonconformity explanation and/or comments on the appropriate comment sheet(s). Place a check beside all other items you observed or verified at the laboratory. Indicate N/A for items not applicable to the laboratory's management system.

Note: The numbering of the checklist items correlates to the numbering scheme in NIST Handbook 150-5, clauses 3, 4 and 5.

3 Accreditation process

3.3 On-site assessment

____ 3.3.3 The laboratory *shall* have its facilities and equipment in good working order and be ready for examination according to the requirements identified in this handbook, NIST Handbook 150, and the laboratory's management system documents including the quality manual.

____ 3.3.4 The laboratory *shall* make available, at the beginning of the on-site assessment, all supporting technical information in a format that is conducive to a detailed review.

____ 3.3.6 c) Laboratory staff *shall* be available to answer questions; however, the NVLAP assessor may wish to review the documents and records alone.

____ 3.3.6 f) The demonstrations *shall* include sample test material(s), preparation of devices, establishment of test conditions and the setup/use of major equipment.

____ 3.3.7 The laboratory *shall* address all nonconformities and provide, within 30 days from the date of the on-site assessment, a response to NVLAP headquarters.

____ 3.3.8 The laboratory *shall* review all comments for potential improvements in construction materials testing.

3.4 Proficiency testing

____ 3.4.1 Laboratories *shall* participate in interlaboratory proficiency testing conducted by a proficiency testing (PT) provider that has been qualified by NVLAP.

____ 3.4.2 Laboratories *shall* participate in proficiency testing categories as required by the Standard Practices for which the laboratory is accredited.

____ 3.4.3 Each laboratory *shall* complete and return to NVLAP the proficiency data release form, which is provided by NVLAP. Proficiency testing results are sent directly to NVLAP from the PT provider.

____ 3.4.4 The laboratory *shall* evaluate the proficiency testing results, identify all outliers and follow the requirements of NIST Handbook 150 for the control of nonconforming work.

____ 3.4.5 The laboratory *shall* correct the problems that led to the poor performance in proficiency testing. The laboratory's accreditation may be suspended if the proficiency testing results indicate continued poor or unsatisfactory performance on consecutive proficiency testing rounds.

____ 3.4.7 Procedures for receiving, analyzing, and monitoring the laboratory's proficiency test results *shall* be in the laboratory's quality manual.

4 Management requirements for accreditation

4.2 Management system

_____ 4.2.2 The controlled version of the laboratory management system documentation may be paper-based or computer-based. Version control *shall* be maintained in either case.

_____ 4.2.3 If the laboratory uses a computer-based documentation system, the laboratory should consider the ease of usability by the staff. The laboratory *shall* ensure that the requirements of NIST Handbook 150 are met so that staff is knowledgeable of the online documentation system and can readily retrieve appropriate information.

_____ 4.2.4 The laboratory *shall* create a cross-reference document allowing the laboratory and a NVLAP assessor to verify that all requirements of clauses 4 and 5 and annexes A and B of NIST Handbook 150 and the corresponding NIST Handbook 150-8 are addressed in the management system documentation.

_____ 4.2.5 The laboratory *shall* develop, document, and implement procedures covering all the technical requirements of this handbook.

_____ 4.2.6 The most recent editions of the documents listed in 1.4 *shall* be available as references in maintaining the management system.

_____ 4.2.7 The laboratory *shall* have readily available the latest published version of all of the test methods for which accreditation has been requested.

_____ 4.2.8 If a customer, for whatever reason (e.g., regulatory requirement), requires performance against previous versions of a standard test method, then the laboratory *shall* document that requirement and *shall* have available the required version of the standard test method.

_____ 4.2.9 The laboratory *shall* have copies of applicable referenced standards, practices and procedures.

_____ 4.2.10 In addition to the information specified in NIST Handbook 150, the quality manual and/or supporting management system procedures *shall* include the following:

_____ a) testing facilities and scope of services offered

_____ b) testing equipment inventory

_____ c) test plan for each test method performed

_____ d) acceptance criteria for test materials/specimens

_____ e) actions concerning damaged test materials/specimens

_____ f) policy for utilizing subcontractors

4.13 Control of records

_____ 4.13.1 Records *shall* be maintained for at least three years.

_____ 4.13.2 Records *shall* be reviewed during the on-site visit either in total or by selected sampling.

4.14 Internal audits

____ 4.14.1 The most recent internal audit report *shall* be available for review during NVLAP on-site assessments.

____ 4.14.2 Previous internal audit reports, as much as three years back, *shall* be available for review if requested by the NVLAP assessor.

____ 4.14.3 The internal audit *shall* cover compliance with NVLAP, laboratory management system, regulatory, and contractual requirements.

____ 4.14.4 The laboratory *shall* perform at least one complete internal audit of its management system prior to the first on-site assessment. The records will be reviewed before or during the on-site assessment visit.

4.15 Management reviews

____ 4.15.1 Periodic reviews of the management system *shall* reflect adherence to NVLAP requirements and the laboratory's quality objectives.

____ 4.15.2 The periodic management reviews *shall* reflect positive aspects of the management system as well as nonconformities.

____ 4.15.3 The most recent management review report *shall* be available for review during NVLAP on-site assessments.

____ 4.15.4 Previous management review reports, as much as three years back, *shall* be available for review if requested by the NVLAP assessor.

____ 4.15.5 The laboratory *shall* perform at least one complete management review prior to the first on-site assessment. The records will be reviewed before or during the on-site assessment visit.

5 Technical requirements for accreditation

5.1 General

_____ The quality manual *shall* contain, or refer to, documentation that describes and details the laboratory's implementation of procedures covering all of the technical requirements in NIST Handbook 150 and this handbook.

5.2 Personnel

_____ 5.2.1 The laboratory *shall* maintain a list of personnel designated to fulfill NVLAP requirements including: Laboratory Director, Technical Director, Team Leaders, NVLAP Authorized Representative, and NVLAP Approved Signatories.

_____ 5.2.2 The laboratory's Technical Director *shall* be a person with appropriate education and experience in a related field and *shall* have the technical competence and the supervisory capability to direct the work of professionals and technicians in construction materials testing.

_____ 5.2.3 If the standard practice(s), for which the laboratory desires accreditation, specifies that the laboratory operate under the technical direction of a professional engineer (P.E.), the laboratory *shall* have a P.E. in order to be accredited by NVLAP for that practice.

_____ 5.2.4 When key personnel are added to the staff, the notification to NVLAP of the personnel changes *shall* include a current resume for each new staff member.

_____ 5.2.5 Laboratories *shall* document the required qualifications for each staff position. The staff information may be kept in the official personnel folders or in separate, official folders that contain only the information that the NVLAP assessors need to review.

_____ 5.2.6 The training program *shall* be updated when procedures change.

_____ 5.2.7 Staff members *shall* be retrained when procedures change, or when the individuals are assigned new responsibilities. Each staff member may receive training for assigned duties either through on-the-job training, formal classroom study, attendance at conferences, or another appropriate mechanism.

_____ 5.2.8 Training materials that are maintained within the laboratory *shall* be kept up-to-date and readily available to laboratory staff.

_____ 5.2.9 For each staff member, the staff member's immediate supervisor, or a designee appointed by the laboratory director*, shall* conduct annually an assessment and an observation of performance.

_____ 5.2.10 Individuals hired to perform testing activities are sometimes referred to as "subcontractors." NVLAP does not make a distinction between full-time laboratory employees and individuals hired on a contract. NVLAP requires that the construction materials testing laboratory maintain responsibility for and control of any work performed within its scope of accreditation. The laboratory *shall* ensure all individuals performing testing activities satisfy all NVLAP requirements, irrespective of the means by which individuals are compensated (e.g., the laboratory must ensure all test personnel receive proper training and are subject to annual performance reviews, etc.).

5.4 Test and calibration methods and method validation

____ 5.4.2 The laboratory *shall* have written procedures for laboratory personnel to follow when conducting tests. If determined suitable by NVLAP, the laboratory may use the specific standard test method as the only written procedure.

____ 5.4.3 The procedures *shall* address any information not specifically contained in the standard method and any deviations used by the laboratory.

____ 5.4.4 The procedures *shall* include equipment operation, calibration checks, and quality control checks.

5.6 Measurement traceability

____ 5.6.1 The laboratory *shall* determine equipment calibration intervals based on the equipment's frequency of use and the environment in which it is used, and/or in accordance with standard test methods.

____ 5.6.2 The laboratory *shall* provide proof that the calibration intervals used by the laboratory are sufficient.

____ 5.6.3 Proper performance of the testing equipment *shall* be periodically verified.

____ 5.6.4 The reference standards used and the environmental conditions at the time of calibration *shall* be documented for all calibrations.

____ 5.6.5 Calibration records and evidence of the traceability of the reference standards used *shall* be made available for inspection during the on-site visit.

____ 5.6.6 In addition to the equipment records specified in NIST Handbook 150, testing equipment calibration records *shall* include the following:

____ a) notation of all equipment variables requiring calibration or verification

____ b) range of calibration/verification

____ c) resolution (precision or the number of digits read) of the instrument and its tolerance (allowable error)

____ d) calibration/verification date and schedule

____ e) identity of the laboratory individual or external service responsible for calibration

____ f) source of reference standard and traceability

5.10 Reporting the results

_____ 5.10.1 Test reports *shall* provide all necessary information to permit the same or another laboratory to reproduce the test plan and obtain comparable results.

_____ 5.10.2 Test reports *shall* clearly indicate that the test results apply to the product or system as tested and, if required, conform to customer/regulator requirements.

COMMENTS AND NONCONFORMITIES

Instructions to the Assessor: Use this sheet to document comments and nonconformities. For each, identify the appropriate item number from the checklist. Identify comments with a "C" and nonconformities with an "X." If additional space is needed, make copies of this page (or use additional blank sheets).

Item No.	Comments and/or Nonconformities