Enter Date: **Enter NVLAP Lab Code:**

NIST HANDBOOK 150-18 CHECKLIST
FASTENERS AND METALS TESTING PROGRAM

Instructions to the Assessor: This checklist addresses specific accreditation requirements prescribed in NIST Handbook 150-18, Fasteners and Metals.

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). Write "OK" beside all other items you observed or verified as compliant at the laboratory.

Note: The numbering of the checklist items correlates to the numbering scheme in NIST Handbook 150-18, clauses 3, 4, and 5.

3 Accreditation process

3.2 Management system review

___ 3.2.1 Prior to applying to NVLAP for accreditation, a laboratory shall have a fully implemented management system.

3.3 On-site assessment

___ 3.3.1 The laboratory shall be prepared to conduct test demonstrations, have equipment in good working order, and be ready for examination according to the requirements identified in NIST Handbook 150, NIST Handbook 150-18, this checklist, and the laboratory’s quality manual.

3.4 Proficiency testing

3.4.1 Participation in proficiency testing is required for:

___ Rockwell hardness of fasteners (externally threaded),

___ axial tensile strength of full-size threaded fasteners,

___ wedge tensile strength of full-size threaded fasteners,

___ tensile strength tests of machined aluminum and steel,

___ fastener double shear,

___ case depth,

___ round dimensional,

___ chemical analysis.

3.4.2 If an accredited laboratory fails a proficiency test, it shall complete the following requirements to maintain its accreditation:

___ a) Within 30 days of notification of failure, submit detailed, written documentation to NVLAP that includes an analysis of why the laboratory failed each part of the test and what corrective actions it has taken (analyst training, revised procedures, quality assurance activities, etc.) to resolve its analytical problems so as to avoid similar errors in the future. Documented evidence that the corrective actions have been effectively implemented is also required.

___ b) Participate successfully in the next round of proficiency testing.

4 Management requirements for accreditation

4.5 Subcontracting of tests and calibrations

___ 4.5.3 Criteria for selection, evaluation and re-evaluation of a subcontractor shall be established and documented in the laboratory management system.

4.5.4 Whenever a laboratory subcontracts the performance of any test or portion of a test to another laboratory, the subcontracting laboratory shall:

___ a) place the work with a competent subcontractor as defined in 4.5.2;

___ b) inform the customer in writing, before the fact, of the intent to subcontract the testing;

___ c) clearly identify in its records and in the report to the customer specifically which test method(s) or portions of a test method(s) were subcontracted.

4.8 Complaints

___ 4.8.1 The laboratory's complaint process shall include the activities of problem identification, cause analysis, counter measure, and remediation.

___ 4.8.2 Where a complaint raises doubt concerning the laboratory's compliance with its management system, policies, procedures or any test method performance, the laboratory shall ensure that the area(s) in question is promptly audited in accordance with 4.14.

4.9 Control of nonconforming testing and/or calibration work

___ 4.9.1 If a test report containing incorrect results was issued in conjunction with nonconforming testing, the laboratory shall revoke the incorrect test report in writing, and after all steps are completed, shall reissue the report with an indication that the test report is now a "corrected report."

___ 4.9.2 Records of the nonconforming work, including subsequent actions taken and concessions obtained, if any, shall be maintained for a minimum of three years.

4.11 Corrective action

___ 4.11.1 Records of corrective actions shall be maintained by the lab.

4.11.2 The laboratory shall take the following steps in performing the corrective action process in addition to the requirements found in NIST Handbook 150:

___ a) identification of nonconformities, including those arising from customer complaints;

___ b) correction of the nonconformities with the test items and/or conditions at hand;

___ c) identification of the same nonconformities with others of the same test-item group and/or conditions;

___ d) identification of test items and/or conditions already in the test process, but not up to the step where the nonconformity was identified;

___ e) continuation of the search until satisfied that all of the nonconformities are located and corrected.

4.12 Preventive action

___ Records of preventive actions shall be maintained by the laboratory.

4.13 Control of records

___ 4.13.1 If a fastener testing laboratory is part of a fastener manufacturing business, “Records of Conformance,” as defined in the FQA, Section 3, Definitions, Part 13, designated for each lot of fasteners sold or offered for sale shall be retained by the laboratory for a minimum of five years.

___ 4.13.2 All other records shall be retained by the laboratory for a minimum of three years.

4.14 Internal audits

___ 4.14.1 The internal audit shall cover compliance with NVLAP, laboratory management system, regulatory, contractual, and testing requirements.

___ 4.14.2 An applicant laboratory shall conduct at least one complete internal audit prior to the first on-site assessment. The records will be reviewed by the NVLAP assessor before or during the on-site assessment visit.

___ 4.14.3 For laboratories that have achieved accreditation, reports of internal audits conducted since the previous on-site assessment shall be made available for review.

___ 4.14.4 Internal audits are separate and distinct from both management reviews (see 4.15) and NVLAP on-site assessments.

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 Management reviews shall include a review of all nonconformities and may reflect positive aspects of the management system.

___ 4.15.3 An applicant laboratory shall perform at least one complete management review prior to the first on-site assessment. The records will be reviewed by the NVLAP assessor before or during the on-site assessment visit.

___ 4.15.4 The report of the management review shall be available during the NVLAP on-site assessment.

5 Technical requirements for accreditation

5.2 Personnel

___ 5.2.1 The laboratory shall have a detailed, documented description of its training program for new and current staff members.

___ The test results obtained by new staff members shall be checked by a staff member whose performance has been demonstrated to be acceptable until the new staff member demonstrates the required level of performance.

___ Documented performance criteria shall be established to determine when a new staff member has achieved the required level of performance.

___ 5.2.2 Each approved signatory shall have a written justification of his/her selection for these responsibilities that is signed by top management with executive-level responsibility.

___ 5.2.3 The laboratory shall maintain a current summary of the information required in NIST Handbook 150, 5.2.5, in matrix format. The matrix shall correlate authorized staff with each test method on the laboratory's scope of accreditation.

___ 5.2.4 Personnel records not available in the laboratory due to corporate regulations, governmental regulations, etc., shall be made accessible for review during the assessment from the department having the assigned jurisdiction.

5.3 Accommodation and environmental conditions

___ Original equipment manufacturer requirements for test laboratory equipment shall be considered by the laboratory when making decisions regarding the levels of accommodation and environmental conditions for the room where the equipment is used.

5.4 Test and calibration methods and method validation

___ 5.4.1 Laboratories shall use standards and specifications that are published by a consensus standards organization or by a government agency, or standards from private industry sources in the five major areas of testing listed in 5.4.2 of NIST Handbook 150-18. The laboratory shall have a copy of all standards, test methods, or specifications for which it seeks accreditation.

___ 5.4.3 The laboratory shall conform in all respects with the standard, test method, or specification employed for a given test, except when a departure becomes necessary for technical reasons.

___ Laboratories utilizing departures from a test method shall have written procedures detailing how the analysis is conducted. These procedures shall include criteria to determine when such departures are warranted.

___ The laboratory shall have data to demonstrate that departures do not detract from the expected precision and accuracy of a measurement.

___ 5.4.4 Where a standard, test method, or specification does not adequately cover all aspects of testing (i.e., sampling, sample preparation, etc.), the laboratory shall have written procedures to address the necessary processes.

5.5 Equipment

___ 5.5.1 All equipment shall be properly maintained to ensure protection from corrosion and other causes of deterioration (see NIST Handbook 150, 5.5.6).

___ Instructions for proper maintenance of equipment that requires periodic maintenance shall be available.

5.5.2 When a test method is performed and/or has results reported on testing equipment controlled by computer software, the following requirements apply to the records maintained of the equipment in addition to the requirements of NIST Handbook 150, 5.5.5.

___ a) When revisions, patches, upgrades and/or regular maintenance require the software to be altered, a description of the changes made shall be recorded in the applicable records retained by the laboratory, including new version number, date of revision, and evidence of validation of the proper performance of the testing equipment "as left."

___ b) A laboratory operator, knowledgeable of the equipment performance, shall make a written indication on the applicable records that the final status of the equipment "as left" is known to the laboratory, including changes in operation and/or the reporting format.

5.8 Handling of test and calibration items

___ 5.8.1 The laboratory shall have a test item log-in system that includes documentation of the date of receipt, identity of the customer, unique identification for each item, condition of the item, and the acceptance or rejection of the item.

___ The laboratory shall have written criteria for acceptance or rejection of test items.

5.8.2 The laboratory shall have a chain-of-custody system that documents the following information:

___ a) location of the item;

___ b) personnel who have handled or worked with the item;

___ c) any handling or storage that may affect the item.

5.10 Reporting the results

___ Corrections or additions to test reports shall specify which test result is in question, the content of the result, the explanation of the result, and the reason for acceptance of the result.

NIST HANDBOOK 150-18 CHECKLIST
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 each comment with a "C" and each nonconformity with an "X." If additional space is needed, make copies of this page or use additional blank sheets.

Item No.	***C or X***	***Comments and/or Nonconformities***

Item No.	*C or X*	*Comments and/or Nonconformities*