NVLAP LAB CODE: [ ]

FASTENERS AND METALS SPECIFIC OPERATIONS CHECKLIST

Instructions to the Assessor: This checklist addresses specific accreditation criteria prescribed in applicable sections of NIST Handbook 150-18.

Place an "X" beside any of the checklist items which represent a deficiency. Place a "C" beside each item on which you are commenting for other reasons. Record the item number and your written deficiency explanations and/or comments on this list or on the comment sheet(s). Place a check beside all other items you observed or verified at the laboratory.

1 Organization and management

(See General Operations Checklist.)

2 Quality system, audit and review

_____ 2.1 The laboratory shall have the following documents available for reference:

_____ 2.1.1 NIST Handbook 150, *NVLAP Procedures and General Requirements*;
_____ 2.1.2 NIST Handbook 150-18, *NVLAP Fasteners and Metals*;
_____ 2.1.3 Fastener Quality Act, Public Law 101-592, 1990;
_____ 2.1.4 National Technology Transfer and Advancement Act, Public Law 104-113, 1995; and
_____ 2.1.5 Procedures for Implementation of the Fastener Quality Act, Title 15, Part 280 of the U.S. Code of Federal Regulations (CFR).

_____ 2.2 The laboratory's quality documentation contains procedures or instructions describing the following:

_____ 2.2.1 training of staff and quality assurance of analyst performance;
_____ 2.2.2 sample custody and handling procedures;
_____ 2.2.3 equipment maintenance and calibration; and
_____ 2.2.4 recordkeeping and generation of reports.

_____ 2.3 The laboratory shall conduct an internal audit of the laboratory not less than annually to verify that the operations of the laboratory are in compliance with its quality manual and this program.

3 Personnel

_____ 3.1 The laboratory shall ensure that staff members are aware of the extent of their area of responsibility.

_____ 3.2 The laboratory shall maintain documentation for each staff member which contains:

_____ 3.2.1 staff member's title and description of that job position;

_____ 3.2.2 job and quality assurance responsibilities;
_____ 3.2.3 résumé;
_____ 3.2.4 training;
_____ 3.2.5 assigned laboratory procedures and duties; and
_____ 3.2.6 results of periodic testing performance reviews.

_____ 3.3 The laboratory shall have a description of its staff training program including its criteria for successful completion.

_____ 3.4 Analysts and technical supervisors shall participate in some form of continuing education, such as formal course work, in-house education, and scientific or technical meetings, and have access to journals that describe advances in their field of testing.

4 Accommodation (facilities) and environment

(See General Operations Checklist.)

5 Equipment and reference materials

(See General Operations Checklist.)

6 Measurement traceability and calibration

_____ 6.1 Calibrations are performed by properly trained staff using calibrated standards traceable to NIST, or by using a NVLAP-accredited calibration laboratory.

7 Test methods and calibration

(See General Operations Checklist.)

8 Handling of calibration and test items

_____ 8.1 The laboratory shall have a sample log system used to uniquely identify the test item and document the action. The log shall include:

_____ 8.1.1 date of receipt of the test item;
_____ 8.1.2 the condition of the test item;
_____ 8.1.3 documentation of acceptance or rejection of test item, reasons for rejection;
_____ 8.1.4 a unique laboratory identification number for each test sample;
_____ 8.1.5 the client identification number, which is the number that the client (or sample taker) assigns to the test item;
_____ 8.1.6 the initials of the person making the above entries in the sample log book.

_____ 8.2 Where there is any doubt as to the test item's suitability for testing (e.g., a mismatch between identification and description, or whether they are of a type which can be analyzed by the laboratory), the laboratory shall have a procedure for informing the client and resolving the problem. This action shall be documented.

9 Records

_____ 9.1 The laboratory's quality system documentation shall have written procedures for the storage and retrieval of records.

_____ 9.2 Records are stored in a logical fashion allowing retrieval within one working day.

_____ 9.3 The laboratory shall have documentation, either electronic backup or "paper" hard copy, to verify survival of original data if computers are used for data retention.

_____ 9.4 The laboratory shall ensure that the analyst signs (or initials) and dates the original data.

_____ 9.5 The following records are maintained for a minimum of 5 years:

_____ 9.5.1 sample custody;
_____ 9.5.2 original data collected by analyst;
_____ 9.5.3 identity of personnel involved in sample preparation and testing;
_____ 9.5.4 calibration and verification data;
_____ 9.5.5 quality control activities and results;
_____ 9.5.6 equipment and maintenance;
_____ 9.5.7 test reports; and
_____ 9.5.8 records of all actions taken in response to testing complaints.

10 Certificates and reports

_____ 10.1 In addition to the requirements in the General Operations Checklist, each test report shall include the following information:

_____ 10.1.1 Fastener description, including:

- manufacturer (name and address);
- product family (screw, nut, bolt, washer, or stud), drive and/or head configurations as applicable;
- date of manufacture;
- head markings (describe or draw manufacturer's recorded insignia and grade identification or property class symbols);
- nominal dimensions (diameter; length of bolt, screw or stud; thickness of load bearing washer or nut); thread form and class of fit;
- product standard and specification related to the laboratory in writing by the manufacturer, importer or distributor;
- lot number and other numbers as appropriate;
- specification and grade of material;
- coating material and standard and specification, as applicable.

_____ 10.1.2 Sampling information, including;

- standard or reference for sampling scheme;
- production lot size and the number sampled and tested;
- name and affiliation of person performing the lot sampling.

_____ 10.1.3 Test results, including;

- actual tests required by standard and specification;
- test results for each sample;
- all deviations from the test method;
- all other items required on test reports according to the test method;
- where the report contains results of tests performed by subcontractors, these results shall be clearly identified along with the name of the laboratory and accreditation information listed in item 10.1.5 of this checklist;
- a statement that the samples tested either conform or do not conform to the fastener standards and specifications and explanation of any nonconformance, except as provided for in sections 280.14 and 280.15 of Title 15, Part 280 of the Code of Federal Regulations.

_____ 10.1.4 The name, title and signature of Approved Signatory accepting technical responsibility for the tests and test report.

_____ 10.1.5 The name of the body which accredited the laboratory (i.e., NVLAP) for the specific tests performed which are the subject of the report, NVLAP Lab Code assigned to the laboratory, and the expiration of accreditation.

_____ 10.2 In addition to the requirements in the General Operations Checklist, for alternative chemical tests carried out under the Fastener Quality Act, the laboratory shall provide to the fastener manufacturer, either directly or through the metal manufacturer, a written inspection and testing report containing the following information:

_____ 10.2.1 Coil or heat number of metal being tested.

_____ 10.2.2 Test results, including:

- actual tests required by standard and specification;
- test results for each sample;
- all deviations from the test method;
- all other items required on test reports according to the test method;
- where the report contains results of tests performed by subcontractors, these results shall be clearly identified along with the name of the laboratory and accreditation information listed in item 10.2.4 of this checklist; and
- a statement that the samples tested either conform or do not conform to the metal standards and specifications and explanation of any nonconformance.

_____ 10.2.3 The name, title and signature of Approved Signatory accepting technical responsibility for the tests and test report.

_____ 10.2.4 The name of the body which accredited the laboratory (i.e., NVLAP) for the specific tests performed which are the subject of the report,

NVLAP Lab Code assigned to the laboratory, and the expiration of accreditation.

_____ 10.3 The laboratory uses a tamper-resistant system to protect test reports.

11 Subcontracting of calibration or testing

_____ 11.1 Testing conducted under the requirements of the Fastener Quality Act (FQA) is subcontracted to a laboratory that is accredited under the provisions of the FQA regulations.

12 Outside support services and supplies

(See General Operations Checklist.)

13 Complaints

(See General Operations Checklist.)

14 Proficiency testing

_____ 14.1 The laboratory shall participate in the mandatory NVLAP Proficiency Testing program, which includes (but is not limited to) the following:

_____ 14.1.1 analyses are not contracted out to another laboratory;
_____ 14.1.2 laboratory keeps and utilizes proficiency testing materials for use as in-house instructional materials;
_____ 14.1.3 one single result is reported back to NVLAP, or its contractor, by the laboratory unless otherwise specified in the testing instructions;
_____ 14.1.4 plans are developed and implemented for resolving problems and are documented; and
_____ 14.1.5 copies of proficiency testing reports, and data sheets are maintained for a minimum of 5 years.

SPECIFIC OPERATIONS CHECKLIST - COMMENTS AND DEFICIENCIES

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

Item No.	*Comments and/or Deficiencies*

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