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Introduction

The American Association for Laboratory Accreditation (A2LA) is a non-profit, nongovernmental, public service, membership organization dedicated to operating a nationwide, broad spectrum laboratory accreditation system. Accreditation is also available to any type of inspection body following the same principles and process as used to accredit laboratories (see *R101 - General Requirements: Accreditation of ISO/IEC 17025 Laboratories*).

A2LA recognizes the very close relationship between inspection, sampling, testing and measurement yet understands that inspection includes a variety of activities not covered in testing laboratory accreditation. Inspection includes the examination of materials, products, components, assemblies, cargoes and consignments, usually for compliance with specified criteria. For the purposes of this document, forensic inspection is defined as the examination of an item or location and, on the basis of professional judgment, the determination of conformity with proposed events or known conditions.


For the purposes of accreditation, measurements that are used to assist in documenting the inspected location or item and tests or processes that are used to assist in the identification, visualization and collection of forensic evidence may be listed on the inspection body's Scope of Accreditation. All other testing must be assessed to the requirements of ISO/IEC 17025 and be listed under a separate Scope of Accreditation.

1 Scope

This document describes the requirements for forensic inspection organizations seeking A2LA accreditation.

All organizations seeking accreditation for forensic inspection must meet the general requirements of ISO/IEC 17020:1998 as outlined in A2LA document R301 – *General Requirements – Accreditation of ISO/IEC 17020 Inspection Bodies*. A2LA's official application of the standard is consistent with the current version of *IAF/ILAC-A4 Guidance on the Application of ISO/IEC 17020*. (*IAF/ILAC-A4 Guidance on the Application of ISO/IEC 17020* may be obtained free of charge in the documents section of the ILAC web site WWW.ILAC.ORG or by contacting A2LA headquarters).

When tests and measurements are involved as part of the inspection process and measurement traceability is required, P102 - *A2LA Policy on Measurement Traceability* applies.

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Organizations seeking accreditation for forensic inspection must also meet A2LA policy and requirements documents:

P101 – *Reference to A2LA Accredited Status – A2LA Advertising Policy*
R102 – *Conditions for Accreditation*

This document describes additional accreditation requirements specifically applicable to organizations performing forensic inspection. The information contained in this document constitutes either additions to the general accreditation requirements or clarifications of the general requirements as they relate to forensic examinations. For ease of use, sections 3 and 16 of this document reflect the sections listed in ISO/IEC 17020.

An inspection body which is engaged in testing, measurement or sampling work may apply for accreditation for this work concurrently with its application for accreditation for inspection.

1.1 References

P101 – Reference to A2LA Accredited Status-A2LA Advertising Policy

P102 – A2LA Policy on Measurement Traceability

R102 – Conditions of Accreditation

ILAC G19:2002, Guidelines for Forensic Science Laboratories

R301 – General Requirements – Accreditation of ISO/IEC 17020 Inspection Bodies


2 Definitions

2.1 For the purposes of these requirements, the relevant terms and definitions given in ISO/IEC 17000, the VIM, and ISO/IEC Guide 2 apply. As used herein the following terms shall have the meanings specified:

2.2 **Administrative Review** – An evaluation of the report and supporting documentation for consistency with organization policies and for editorial correctness.

2.3 **Court Statement** – A written report of the results and interpretations of forensic tests/examinations submitted to court. Such reports may be in a format prescribed in legislation.

2.4 **Examiner/Analyst** – An individual who conducts and/or directs the inspection of scenes of crime or submitted items, interprets data, reaches conclusions and testified in court.

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- 2.5 Forensic Inspection – The examination of an item or location and on the basis of professional judgment the determination of their conformity with proposed events or known conditions.
- 2.6 Forensic Science – The examination of scenes of crime, recovery of evidence, examination of evidence, interpretation of findings and presentation of the conclusions reached for intelligence purposes or for use in court.
- 2.7 Known samples – Those samples whose identity or type is established
- 2.7.1 Exemplar¹ – A specimen of physical evidence collected from a known origin
- 2.7.2 Control¹ – A material of established origin that is used to evaluate the origin of a test or comparison
- 2.8 Objective Test – A test which, having been demonstrated and validated, is under control so it can be demonstrated that all appropriately trained staff will obtain the same results within defined limits. These defined limits relate to expressions of degrees of probability as well as numerical values.
- 2.9 Physical Evidence – Items collected or submitted for examination in relation to a crime or criminal act.
- 2.10 Reference Collection – A collection of stable materials, substances, objects or artifacts of known properties or origin that may be used in the determination of the properties or origins of unknown items.
- 2.11 Technical Review – An evaluation of reports, notes, data, and other documents to ensure an appropriate and sufficient basis for the scientific conclusions. This review is conducted by a second qualified individual.


3 Administrative Requirement

No additional requirements.

4 Independence, Impartiality and Integrity

No additional requirements.

¹ ASTM Standards, ASTM E 1732, Standard Terminology Related to Forensic Science

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5 Confidentiality

No additional requirements.

6 Organization and Management

6 FI1.1 When applicable, the organization shall appoint a member of staff as Health and Safety Manager, however named, who is responsible for maintaining the Health and Safety program and who monitors compliance with the program.

7 Quality System


7 FI1.1 TESTING: It is recognized that the performance of chemical processes and physical, chemical and dimensional tests to assist in the identification, visualization and collection of forensic evidence plays an important role in the inspection process. Examples of these activities include but are not limited to:

- Dimensional measurement of the scene or object;
- Chemical tests to identify blood and other body fluids;
- Chemical processes to visualize latent prints;
- The use of alternative light sources to visual latent prints, blood and trace evidence.

Analytical testing performed on collected evidence (i.e. DNA testing, Quantitative and Qualitative analysis of questioned drugs, firearms and trace evidence, Digital media examination and analysis) would be considered a laboratory test and not part of the inspection process. Separate accreditation to ISO/IEC 17025 for such analytical testing is needed.

7 FI1.2 QUALITY CONTROL: When a forensic inspection body employs physical, chemical and dimensional testing activities as part of the inspection process to assist in the identification, visualization and collection of evidence, these activities shall be monitored by operating quality control schemes which are appropriate to the type and frequency of the process undertaken by an organization. Such quality control activities shall be planned and follow written procedures. The range of quality control activities available to forensic organizations includes the use of:

- Positive and negative controls;
- Alternative methods;
- Repeat testing;
- Independent checks (verification) by other authorized personnel.

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Depending on the particular process being performed, the organization may make use of one or several of these examples to demonstrate that the procedure is ‘under control’.

The quality control procedures necessary in any particular area of work shall be determined by the organization responsible for the work, based on best professional practice. The procedures shall be documented and records shall be retained to show that all appropriate QC measures have been taken, that all QC results are acceptable or, if not, that remedial action has been taken.

7 FI1.3 **PROFICIENCY TESTING:** An effective means for a forensic organization to monitor its performance of inspection activities (e.g. crime scene analysis, blood pattern analysis, body fluid identification), both against its own requirements and against the performance of peer forensic organizations, is to take part in commercial proficiency testing programs, interlaboratory comparison programs or round robins.

Where commercial proficiency testing programs are available and applicable to the physical, chemical and dimensional testing activities performed as part of the inspection process or to the inspection process, the organization shall meet all proficiency testing requirements as outlined in A2LA document *R103 - General Requirements- Proficiency Testing for ISO-IEC 17025 Laboratories* in addition to the requirements listed below:

- a. All forensic personnel actively engaged in forensic inspection shall participate in commercial proficiency testing, intralaboratory or interlaboratory or round robin testing annually for each sub-discipline in which they are competent. A listing of forensic sub-disciplines can be found in *R103a - Annex- Proficiency Testing for ISO-IEC 17025 Laboratories*.
- b. When participating in commercial proficiency testing, intralaboratory or interlaboratory or round robin comparison programs, the organization’s own documented test procedures shall be used. Performance in the programs shall be reviewed regularly and where necessary, corrective action shall be taken.
- c. Records of comparison testing shall include:
 - Full details of the analyses / examinations undertaken and the results and conclusions obtained;
 - An indication that performance has been reviewed and the outcome of that review;
 - Details of the corrective action undertaken, where necessary.

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7 FI1.4 The laboratory shall have a defined procedure to ensure that personnel participating in the same round of commercial proficiency testing, intralaboratory or interlaboratory or round robin testing do not share or compare results prior to reporting.

7 FI1.5 Quality control activities shall also include a procedure whereby the testimony of each inspector is monitored. The monitoring shall be performed at a minimum, on an annual basis. The evaluation shall be documented and shall include appearance, performance and effectiveness of presentation. The inspection body's corrective action procedures shall be followed whenever less than satisfactory results are obtained. The procedure shall also address alternate methods of evaluation when an inspector is not called to give testimony in a given year.

7 FI1.6 The organization shall have documented policies and procedures for the administrative and technical review of case records, including inspection reports.

Each case file and final report shall undergo administrative review for completeness and accuracy, in relation to case information and required elements of the case file, and shall be conducted and documented in accordance with written procedures.


Technical review of case records shall be performed at a frequency sufficient to ensure the continued reliability of inspection activities and conclusions. Technical reviews shall be conducted in accordance with a predetermined schedule and shall ensure that the work of each inspector is reviewed at least once per year. Each technical review shall be carried out by personnel deemed competent to perform the examinations being reviewed. Technical reviews shall be documented and shall include an indication that the inspection findings have been reviewed, by whom the review was performed and the technical findings of the review. This may be indicated in a number of ways including entries against finding, entry on a summary of findings or a statement to this effect in the records.

Where administrative or technical review results in incongruent results, opinions or interpretations between technical staff and the reviewer, a further investigation following written procedures for the investigation and corrective action of nonconforming results shall be applied. A record of each determination and resolution shall be maintained within the case file.

7 FI1.7 Records of corrective actions shall be kept and reviewed for continued compliance.


8 Personnel

8 FI1.1 The forensic science organization shall have a defined policy and procedure that ensures that all staff working in the organization is competent to perform the work

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required. The term ‘competent’ implies possessing the requisite knowledge, skills and abilities to perform the job duties, demonstrated acceptable performance of job duties and ongoing maintenance of skills and expertise through continuing education. The organization’s policy and procedure shall include personal certification, a period of supervised casework and continuing education.

- 8 FI1.2 All examiners/analysts shall maintain or be in the process of obtaining personal certification for each inspection sub-discipline in which they are authorized to perform work, where available.
- 8 FI1.3 Where necessary, training programs shall also include training in the presentation of evidence in court.
- 8 FI1.4 The forensic organization shall maintain records of all continuing education completed. These records shall include:
- Title of class or program;
 - Brief description of teaching points;
 - Date completed;
 - Name and qualifications of presenter;
 - Record of Performance (if applicable).
- 8 FI1.5 Inspection personnel, regardless of previous experience, shall complete a qualifying exam or practical exercise (e.g. mock crime scene) in all areas for which they have been deemed competent before being approved for casework. Records of acceptable performance shall be maintained.
- 8 FI1.6 The forensic organization shall set minimum educational and experience requirements for all job descriptions. Consideration should be given to each discipline of forensic inspection and related published guidelines when determining degree or subject matter requirements.
- Technical staff who were previously authorized by management to perform inspections, but do not meet current educational requirements may be authorized to perform such functions at the discretion of the organization if the staff member's experience exceeds that of the minimum needed to be considered competent. Evidence of prior authorization must be available.
- 8 FI1.7 Educational requirements included within a given standard inspection method or federal or state requirement shall be met by all technical staff for which they apply.

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9 Facilities and Equipment

9 FI1.1 Storage areas for items collected by or submitted to the inspection body shall be secure to prevent theft or interference and there shall be limited and controlled access. The storage conditions shall be such as to prevent loss, deterioration and contamination and to maintain the integrity and identity of the evidence. Appropriate storage conditions shall be used both before and after examinations are performed.

9 FI1.2 The organization shall have and maintain or have access to:

- a. Reference documents (i.g. text books, scientific journals) and
- b. A Reference Collection of forensic items of known origin, where applicable.

To be used for research, education, identification, comparison or interpretation purposes.

9 FI1.3 The forensic science organization shall have written procedures for the reception, handling, preparation and storage of reagents and consumable materials relevant for inspection processes.


9 FI1.4 The quality of standard materials and reagents shall be adequate for the procedure used. Lot/batch numbers of standard materials and critical reagents shall be recorded. All critical reagents shall be checked for their reliability prior to use.

Standard materials and reagents shall be labeled with:

- name;
- concentration, where appropriate;
- preparation date, if applicable, and expiry date;
- identity of preparer;
- storage conditions, if relevant;
- hazard warning, where necessary.

10 Inspection Methods and Procedures

10 FI1.1 All forensic inspection activities (e.g. crime scene photography, measurement and sketching, evidence identification and collection) shall be fully documented including procedures for quality control, where appropriate, and guidelines for the interpretation and reporting of results.

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10 FI1.2 It is recognized that forensic inspection involves the use of chemical processes and physical, chemical and dimensional tests to aid in the discovery of evidentiary information or evidentiary items (i.e. use of cyanoacrylate or scene measurement). All such activities conducted while performing forensic inspection shall be fully validated before being used on casework. Validation of forensic inspection support activities shall follow a written procedure.

Methods may be validated by comparison with other established methods using certified reference materials (where available) or materials of known characteristics. In validating test methods, the following issues (among others) shall be considered, as appropriate:

- matrix effects;
- interferences;
- sample homogeneity;
- concentration ranges;
- specificity;
- stability of measured compounds;
- linearity range;
- population distribution;
- precision;
- measurement uncertainty.


Validation studies can be conducted by the scientific community (as in the case of standard or published methods) or by the forensic science organization itself (as in case of methods developed in-house or where significant modifications are made to previously validated methods).

10 FI1.3 When an organization introduces a new (validated) method, the organization shall first:

- a. Demonstrate the reliability of the procedure in-house against any documented performance characteristics of that procedure;
- b. Confirm staff competency to perform the procedure.

Records of method validation and performance verification shall be maintained for future reference and shall contain sufficient information to facilitate, if possible, identification of factors affecting the uncertainty and to enable the process to be repeated under conditions as close as possible to the original.

10 FI1.4 The forensic organization, when applicable, shall:

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- a. Have a policy and procedure for meeting required health and safety standards as outlined by the pertinent government, environmental and health and safety authorities and including:

- A blood borne pathogen and chemical hygiene plan;
- The use of personal protective equipment.

Health and Safety manual(s) and applicable Material Safety Data Sheets shall be readily available to all personnel. Documented training in health and safety standards shall be readily available.

- b. Have a policy and procedure for maintaining adequate security for personnel and operations.

11 Handling Inspection Samples and Items


- 11 FI1.1 For legal purposes, forensic science organizations shall be able to demonstrate that items examined and reported on are those collected by or submitted to the organization. A 'chain of custody' record shall be maintained for the collection of items which details each person who takes possession of an item or alternatively the location of that item (i.e. if in storage).

At a minimum, a chain of custody record for each item of evidence shall include:

- Evidence identifier;
- Description of collection location;
- Description of item collected and any packaging and identifying marks;
- Date and time of collection;
- Printed name and signature of initial individual to collect the evidence;
- Date of transfer and printed name and signature of each subsequent individual receiving or transferring the item.

Chain of Custody for items not delivered by hand may include a description of the packaging, description of delivery method and any tracking information on the package.

- 11 FI1.2 The forensic organization shall have a policy and documented procedures which describe, where applicable, the collection, packaging, transportation, handling and disposition of collected or submitted items and the measures to be taken to prevent loss, contamination and cross contamination and to secure exhibits which must be left unattended.

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11 FI1.3 Where it is possible to record or copy an item or significant features of an item or location (e.g. photographs, tape lifts, casts), the inspection body shall clearly define what is considered evidence and what is considered documentation.

12 Records

12 FI1.1 The forensic organization shall have documented procedures to ensure that it maintains a coordinated record relating to each case under investigation. The information that is to be included in case records shall be documented and may include:

- Case Identifier;
- Records of requests, tenders or contracts;
- List and description of locations/items inspected;
- List of items collected, if any;
- Chain of Custody records for each item of evidence collected, if any;
- Evidence receipts for items sent to a testing laboratory;
- Copies of all results from testing performed by a contracted testing laboratory that was received and reviewed as part of the inspection;
- Description of inspections performed;
- Inspection results and reports;
- Reference to procedures used;
- Diagrams, print-outs, auto radiographs, photographs, etc.


12 FI1.2 The forensic organization shall have written procedures for the documentation and maintenance of case notes.

12 FI1.3 The records required to support conclusions shall contain sufficient information to enable another competent analyst/examiner to evaluate what had been performed and interpret the data.

12 FI1.4 Where appropriate, observations shall be preserved by photography or electronic scanning (e.g. scene photographs, electrostatic lifts). Photocopies, tracings or hand-drawn facsimiles may also be suitable (e.g. scene sketches).

12 FI1.5 When an inspection eliminates a possible sequence of events based on a lack of conformity between the scene and/or evidence and the proposed sequence of events, the reason(s) shall be documented in the case record.

12 FI1.6 Calculations and data transfers which do not form part of a validated electronic process shall be checked, preferably by a second qualified person. The case record

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shall include an indication that such checks have been carried out and by whom. (e.g. units of measurement conversions, angle calculations, statistical analyses)

12 FI1.7 Examination records shall be paginated using a page numbering system which indicates the total number of pages and end of document.

12 FI1.8 Each page of every document in the case record shall be traceable to the inspection analyst/examiner and where appropriate, to a uniquely identified case or exhibit. It shall be clear from the case record who has performed each stage of the inspection and when each stage of the inspection was performed (e.g. relevant date(s)).

13 Inspection Reports and Inspection Certificates


13 FI1.1 It is accepted that forensic inspection organizations may not be able to include all of the items in 'Court Statements' that are detailed in section 13 of ISO/IEC 17020 as the format of these documents is prescribed in legislation. Forensic inspection bodies may therefore elect to adopt one or more of the following means of meeting these requirements:

- The preparation of a inspection report which includes all of the information required by ISO/IEC 17020;
- The preparation of an annex to the Court Statement which includes any additional information required by ISO/IEC 17020.

13 FI1.2 Reports produced by the forensic organization shall include:

- The case identifier;
- The date of issue and a description of all locations and items inspected;
- An indication of the analyst who performed each stage of the inspection;
- The results of all physical, chemical and dimensional testing performed as part of the inspection to assist in the identification, visualization and collection of evidence;
- The results of all testing performed by a contracted testing laboratory that was received and reviewed as part of the inspection;
- A description of the error rate, measurement uncertainty or uncertainty of the determination where available and in accordance with written guidelines.

13 FI1.3 Case records and reports shall be released to requesting persons, agencies and organization in accordance with federal and state law and following a written policy and procedure.

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14 Subcontracting

14 FI1.1 When an organization subcontracts work, the work shall be placed with a competent subcontractor. Competency shall be clearly defined and may include:

- Compliance to regulatory requirements for the discipline in which examination is sought;
- Compliance to ISO/IEC 17020 specific to the subcontracted activities being sought;
- Compliance to this requirements document.

14 FI1.2 Records of actions taken to check compliance shall be maintained.


14 FI1.3 Result data produced by subcontractors shall undergo technical review and approval prior to release to customers. See section 7.6.

15 Complaints and Appeals

No additional requirements.

16 Cooperation

No Additional requirements.

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