Designation: E860 – 22

An American National Standard

Standard Practice for Examining and Preparing Items That Are or May Become Involved in Criminal or Civil Litigation[1]

This standard is issued under the fixed designation E860; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers procedures for the examination and testing of evidence items or systems that may have been involved in a specific incident which are, or may be reasonably expected to be, the subject of civil or criminal litigation.

1.2 This practice is applicable when it is determined that examination or testing of evidence is required, and such examination is likely to change the nature, state, or condition of the evidence.

1.3 This practice is intended for use by competent forensic science practitioners with the requisite formal education, discipline-specific training (see Practice E2917), and demonstrated proficiency to perform forensic casework.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E1020 Practice for Reporting Incidents that May Involve Criminal or Civil Litigation (Withdrawn 2022)[3]

E1188 Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator

E1413 Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Dynamic Headspace Concentration onto an Adsorbent Tube

E1459 Guide for Physical Evidence Labeling and Related Documentation

E1492 Practice for Receiving, Documenting, Storing, and Retrieving Evidence in a Forensic Science Laboratory

E1732 Terminology Relating to Forensic Science

E2917 Practice for Forensic Science Practitioner Training, Continuing Education, and Professional Development Programs

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminology E1732.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *destructive testing, n*—testing, examination, re-examination, disassembly, or other actions likely to alter the original, as-found nature, state, or condition of items of evidence so as to preclude or adversely affect additional examination and testing.

3.2.2 *spoliation of evidence, n*—the loss, destruction, or material alteration of an object or document that is evidence or potential evidence in a legal proceeding by one who has the responsibility for its preservation.

3.2.2.1 *Discussion*—Spoliation of evidence may occur when the movement, change, or destruction of evidence, or alteration of the scene significantly impairs the opportunity of other interested parties to obtain the same evidentiary value from the evidence as did any prior investigator.

4. Significance and Use

4.1 This practice establishes procedures to be followed by the forensic science practitioner to document the nature, state, or condition of items of evidence. It also describes specific actions that are required for destructive testing if planned testing, examination, disassembly, or other actions are likely to alter the nature, state, or condition of the evidence so as to preclude or adversely limit additional examination or testing.

[1] This practice is under the jurisdiction of Committee E30 on Forensic Sciences and is the direct responsibility of Subcommittee E30.11 on Interdisciplinary Forensic Science Standards.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The last approved version of this historical standard is referenced on www.astm.org.

4.2 Deviations from this practice are not necessarily wrong or inferior, but such deviations should be justified and documented.

5. Procedure

5.1 The forensic science practitioner can be the person, firm, laboratory, or agency responsible for conducting examinations or tests of the evidence who is responsible for documenting the nature, state, and condition of the evidence as collected or received by descriptive, photographic, or other suitable methods prior to any test, examination, re-examination, disassembly, or alteration.

5.1.1 The chain-of-custody record documents the chronological movement, location, and custodial status of physical evidence from the time it is collected through the final disposition. A break in the chain of custody can be grounds for challenging the admissibility of evidence. See Practice E1188.

5.1.1.1 Each forensic science practitioner involved with evidence collection, storage, and handling of evidence documents the condition of any evidence package when collected, or received, and while in their possession (for example, sealed, not sealed, or damaged).

5.1.1.2 Every transfer of evidence between individuals and storage locations are documented by the forensic science practitioner having the custody of the evidence. The condition of all transfers are documented.

5.1.2 When the forensic science practitioner observes any change(s), alteration(s) or contamination of the evidence subsequent to the incident or collection of the evidence at the scene, such observations and findings are documented.

5.1.3 Any changes made to the contents of the package are documented.

5.2 The forensic science practitioner, whenever feasible, leaves a sufficient quantity of the substance intact to allow independent testing or reanalysis at a later date..

5.3 *Destructive Testing Considerations*

5.3.1 It is recognized that certain characteristics cannot be determined without destructive testing. Non-destructive tests and examinations are carried out prior to any destructive testing, and destructive testing should be kept to a minimum, and thoroughly documented. If exemplars can be used instead of the subject items, then exemplars should be used to minimize consumption of the subject item. If proposed tests, examinations, or other actions are likely to cause spoliation of evidence so as to preclude additional examination or testing, the forensic science practitioner planning to perform the proposed action should take the following steps:

5.3.2 When destructive testing will preclude additional testing of evidence (i.e., the entire sample is consumed), notify the client, or current owner of the evidence, that the proposed action is likely to alter the nature, state, or condition of the evidence resulting in spoliation of evidence.

5.3.3 Recommend that its client, or current owner of the evidence, notify other known interested parties of the proposed testing or examination, and,

5.3.4 Recommend to its client, or current owner of the evidence, that other known interested parties be given the opportunity to participate in the procedures described in 5.3 or to witness and record any such actions that may result in spoliation of evidence.

5.3.5 If compelling reasons exist for performing the actions without notifying other parties, then the forensic science practitioner, firm, or agency planning the actions should document in writing, and preserve documentation, supporting the compelling reasons for such action.

5.4 Forensic science practitioners working on evidence collected for criminal or civil cases should understand that there may be parties to a related potential civil or criminal case whose interests could be prejudiced if evidence is not handled in conformance with applicable standards.

5.5 Upon completion of testing or examination, the forensic science practitioner conducting the examination shall preserve and label each item in a manner that protects and maintains its identity and integrity of the evidence in accordance with Guide E1459.

5.6 Discipline specific standards provide additional guidance on the handling, examination, and preservation of evidence.

6. Documentation

6.1 Document methods and procedures used, and results obtained in tests, examinations, disassembly, or other actions conducted in compliance with this practice.

6.2 Document evidence according to Practice E1188.

6.3 Label any new items of evidence resulting from the testing according to the procedures set forth in Guide E1459.

6.4 Document the chain of custody according to Practice E1492.

6.5 Refer to discipline specific standards for additional documentation requirements (see Appendix X1).

7. Keywords

7.1 evidence collection and preservation; forensic science; forensic standards

APPENDIX

(Nonmandatory Information)

X1. ADDITIONAL INFORMATION

X1.1 This appendix lists standards which may provide additional discipline-specific information.

X1.2 *Anthropology*:

ANSI/ASB Standard 045, Standard for Stature Estimation in Forensic Anthropology[4]

ANSI/ASB Best Practice Recommendation 089, Best Practice Recommendation for Facial Approximation in Forensic Anthropology[4]

ANSI/ASB Standard 090, Standard for Sex Estimation in Forensic Anthropology[4]

X1.3 *Digital and Multimedia*:

E2825 Guide for Forensic Digital Image Processing[2]

E3017 Practice for Examining Magnetic Card Readers[2]

E3115 Guide for Capturing Facial Images for Use with Facial Recognition Systems[2]

E3148 Guide for Postmortem Facial Image Capture[2]

E3149 Guide for Facial Image Comparison Feature List for Morphological Analysis[2]

X1.4 *DNA*:

FBI Quality Assurance Standards for Forensic DNA Testing Laboratories[5]

X1.5 *Document Examination*:

ANSI/ASB Standard 044, Standard for Examination of Documents for Indentations[4]

ANSI/ASB Standard 035, Standard for the Examination of Documents for Alterations[4]

ANSI/ASB Standard 117, Standard for Examination of Stamping Devices and Stamp Impressions[4]

X1.6 *Explosives*:

E2998 Practice for Characterization and Classification of Smokeless Powder[2]

E2999 Test Method for Analysis of Organic Compounds in Smokeless Powder by Gas Chromatography-Mass[2]

X1.7 *Fibers*:

E2224 Guide for Forensic Analysis of Fibers by Infrared Spectroscopy[2]

E2225 Guide for Forensic Examination of Fabrics and Cordage[2]

E2227 Guide for Forensic Examination of Non-Reactive Dyes in Textile Fibers by Thin-Layer Chromatography[2]

E2228 Guide for Microscopical Examination of Textile Fibers[2]

X1.8 *Firearms*:

ANSI/ASB Standard 093, Standard Test Method for the Forensic Examination and Testing of Firearms[4]

X1.9 *Fire Debris*:

E1386 Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Solvent Extraction[2]

E1388 Practice for Static Headspace Sampling of Vapors from Fire Debris Samples[2]

E1412 Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Passive Headspace Concentration with Activated Charcoal[2]

E1413 Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Dynamic Headspace Concentration onto an Adsorbent Tube[2]

E1618 Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry[2]

E2154 Practice for Separation and Concentration of Ignitable Liquid Residues from Fire Debris Samples by Passive Headspace Concentration with Solid Phase Microextraction (SPME)[2]

E2451 Practice for Preserving Ignitable Liquids and Ignitable Liquid Residue Extracts from Fire Debris Samples[2]

E2881 Test Method for Extraction and Derivatization of Vegetable Oils and Fats from Fire Debris and Liquid Samples with Analysis by Gas Chromatography-Mass Spectrometry[2]

E2997 Test Method for Analysis of Biodiesel Products by Gas Chromatography-Mass Spectrometry[2]

E3189 Practice for Separation of Ignitable Liquid Residues from Fire Debris Samples by Static Headspace Concentration onto an Adsorbent Tube[2]

X1.10 *Footwear and Tire Marks*:

ANSI/ASB Best Practice Recommendation 021, Best Practices for the Preparation of Test Impressions from Footwear and Tires[4]

ANSI/ASB Best Practice Recommendation 049, Best Practice Recommendation for Lifting of Footwear and Tire Impressions[4]

ASB Best Practice Recommendation 126, Best Practice Recommendation for Casting Footwear and Tire Impression Evidence at the Crime Scene[6]

X1.11 *Glass*:

E1967 Test Method for the Automated Determination of Refractive Index of Glass Samples Using the Oil Immersion Method and a Phase Contrast Microscope[2]

E2330 Test Method for Determination of Concentrations of Elements in Glass Samples Using Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for Forensic Comparisons[2]

[4] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

[5] Available from the Federal Bureau of Investigation (FBI), https://archives.fbi.gov.

[6] Available from The American Academy of Forensic Sciences (AAFS), https://www.aafs.org.