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Standard Guide for Inspection and Evaluation of Tampering of Security Seals[1]

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1. Scope

1.1 This guide covers procedures for the inspection and evaluation of tampering of security seals.

1.2 A security seal is a device intended to detect tampering or entry. Evaluate only single use locking devices under this guide. The following procedures shall serve as guidelines for detecting attempts at defeat and reapplication of a security seal.

1.3 This guide is not intended to be fully comprehensive; certain types of security seals, such as labels, have not been addressed to date. Further, it is the responsibility of users of this guide to interpret their specific security needs concerning the use of seals, and to determine the grade of seal appropriate for their particular application. ASTM assumes no responsibility for losses occurring as a result of a defeated seal.

1.4 *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]

F832 Classification for Security Seals

F883 Performance Specification for Padlocks

F946 Guide for Establishing Security Seal Control and Accountability Procedures

3. Teminology

3.1 *Definition:*

3.1.1 *seal*—a passive, one-time locking device used to detect tampering or entry, afford limited resistance (to entry) or provide a combination of both functional aspects.

4. Significance and Use

4.1 If a seal can be opened by any means and successfully reapplied without exhibiting signs indicative of prior attack, the integral quality of the seal is in serious question. This guide allows that any particular method of attempted defeat can be employed to defeat a seal, and concentrates not on the effectiveness of the seal to resist that attack, but rather on the nature of the individual seal to inhibit reapplication.

4.2 This standard presents guidelines for inspection to assist in determining whether an attempt to defeat a security seal, and to possibly reapply the seal, has been made. In all cases, the guidelines are meant to focus attention on signs of attack and reapplication.

5. Seal Classification

5.1 *General*—For the purpose of comparing seal physical properties, seal classes are grouped according to the following description of applicable seals:

5.2 *Groups:*

5.2.1 *Group 1*—Flexible cable and wire seals.

5.2.2 *Group 2*—Strap, cinch seals.

5.2.3 *Group 3*—Rigid bolt and rod seals, including heavy duty metal padlock type.

5.2.4 *Group 4*—Twisted rod or wire seals (pigtail).

5.2.5 *Group 5*—Padlock type seals, scored seals, metal, or plastic base.

5.2.6 Group 6—Fiber optic seals.

6. Guidelines for Inspection and Evaluation of Tampering

6.1 *Group 1 Seals (Cable and Wire Seals)*—Inspect for a frayed appearance at the point where the main length of cable or wire meets the locking portion of the seal. Usually under compression, if this region of the seal has been twisted free of its retaining junction at the locking point, it may provide visual indication that the uniform pattern of material has been disturbed. The attempt at reinsertion of the cable into the locking mechanism, if successful, may also be detected by easy withdrawal of the cable by hand at time of inspection.

6.2 *Group 2 Seals (Strap, Cinch, or Nonscored Seals)*—Inspect to reveal scratches or nicks adjacent to the locking mechanism of the seal. Deformation of the locking mechanism by forcible expansion of the lock point will be readily visible

[1] This guide is under the jurisdiction of ASTM Committee F12 on Security Systems and Equipment and is the direct responsibility of Subcommittee F12.50 on Locking Devices.

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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.