



Standard Guide for Examination of Fracture Patterns and Paper Fiber Impressions on Single-Strike Film Ribbons and Typed Text¹

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1. Scope

1.1 This guide provides procedures that should be used by forensic document examiners (Guide E444) for examinations and comparisons involving single-strike film ribbons with typed text and related procedures.

1.2 These procedures are applicable whether the examination and comparison is of questioned and known items or of exclusively questioned items.

1.3 These procedures include evaluation of the sufficiency of the material submitted for examination.

1.4 These procedures are also generally applicable to examinations of lift-off and cover-up correction tapes and sheets.

1.5 These procedures may also be applicable (in whole or in part) to examinations of carbon paper and carbon copies or of documents produced with certain non-impact printing devices (for example, printing devices using a thermal imaging transfer ribbon).

1.6 The particular methods employed in a given case will depend upon the nature of the material available for examination.

1.7 This guide may not cover all aspects of unusual or uncommon examinations.

1.8 *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 and health practices and determine the applicability of regulatory requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

E444 Guide for Scope of Work of Forensic Document Examiners

¹ This guide is under the jurisdiction of ASTM Committee E30 on Forensic Sciences and is the direct responsibility of Subcommittee E30.90 on Executive.

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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.

E1732 Terminology Relating to Forensic Science

E2195 Terminology Relating to the Examination of Questioned Documents

F221 Terminology Relating to Carbon Paper and Inked Ribbon Products and Images Made Therefrom

F909 Terminology Relating to Printers

F1623 Terminology Relating to Thermal Imaging Products

3. Terminology

3.1 *Definitions*—For definitions of terms in this guide, refer to Terminology E1732 and Terminology E2195.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *cover-up correction, n*—see **overprint correction**.

3.2.2 *fracture pattern, n*—the spatial arrangement of each complementary edge formation created when a single object is separated into two or more fragments.

3.2.3 *impact printer, n*—a printer in which printing is the result of mechanical impacts. **F909**

3.2.4 *impression, n*—an image formed by pressure.

3.2.5 *lift-off correction, n*—the removal of a typed character by restriking with the same character while interposing an adhesive coated tape or sheet, thereby causing the imprinted character to adhere to the coating and be stripped from the record-medium.

3.2.6 *multi-strike film ribbon, n*—a ribbon wherein the substrate film such as polyester is coated or impregnated with an ink which allows several different imprints to be made from multiple overstrikes on the same location on the ribbon, and still result in full characters being printed. **F221**

3.2.7 *original typed text, n*—typed text imprinted onto the surface of a record-medium as the result of the impact of a type-face striking directly or through a ribbon.

3.2.8 *overprint correction, n*—the removal of a typed character from the text by restriking with the same character while interposing a tape or sheet coated with an opaque coating material, thereby causing the imprinted character to be covered by the coating.

3.2.9 *paper fiber impression, n*—the imprint of a paper fiber in the ribbon substrate.