



Standard Guide for Physical Match of Paper Cuts, Tears, and Perforations in Forensic Document Examinations¹

This standard is issued under the fixed designation E2288; 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 guide provides procedures that should be used by forensic document examiners (Guide [E444](#)) for examinations and comparisons to determine whether or not two or more paper fragments were at one time joined to form a single piece of paper.

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

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

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

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

1.6 *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

[E1732](#) Terminology Relating to Forensic Science

[E2195](#) Terminology Relating to the Examination of Questioned Documents

3. Terminology

3.1 *Definitions*—For definitions of terms in this guide, refer to Terminology [E1732](#) and Terminology [E2195](#).

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.

Current edition approved March 1, 2009. Published March 2009. Originally approved in 2003. Last previous edition approved in 2003 as E2288 – 03. DOI: 10.1520/E2288-09.

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.

4. Significance and Use

4.1 This guide is intended for, but may not be limited to, physical match examinations of paper items. The physical matching or realignment of items of evidence may occur in two or three dimensions.

4.2 The procedures outlined here are grounded in the generally accepted body of knowledge and experience in the field of forensic document examination. By following these procedures, a forensic document examiner can reliably reach an opinion concerning whether or not two or more paper fragments were at one time parts of a single piece of paper.

5. Interferences

5.1 Items submitted for examination may have inherent limitations that can interfere with the procedures in this guide. Limitations should be noted and recorded.

5.2 Limitations can be due to limited quantity, or comparability, or condition of the items submitted for examination. The condition of a paper sample may make it unsuitable for some types of examinations (for example, items that are water soaked, stained, soiled, charred, or finely shredded paper). Such features are taken into account in this guide.

5.3 The results of prior storage, handling, testing, or chemical processing (for example, for latent prints) can interfere with the examination of certain characteristics. Whenever possible, document examinations should be conducted prior to any chemical processing. Items should be handled appropriately to avoid compromising subsequent examinations.

5.4 In the absence of individual characteristics, it may only be possible to demonstrate an association between two or more items through the commonality of class characteristics.

6. Equipment and Requirements

6.1 Appropriate light source(s) of sufficient intensity to allow fine detail to be distinguished.

NOTE 1—Natural light, incandescent or fluorescent sources, or fiber optic lighting systems are generally utilized. Transmitted lighting, side lighting, and vertical incident lighting have been found useful.

6.2 Magnification sufficient to allow fine detail to be distinguished.