FACTSHEET FOR ANSI/ASTM STANDARD GUIDE E3392-24

Forensic Physical Fit Examination

WHAT IS AN AAFS STANDARD FACTSHEET?

The AAFS produces clear, concise, and easy-to-understand factsheets to summarize the contents of technical and professional forensic science standards on the OSAC Registry. They are not intended to provide an interpretation for any portion of a published standard.

WHAT IS THE PURPOSE OF THIS STANDARD?

This guide is intended to assist forensic science practitioners (FSPs) with physical fit examinations of broken, torn, or separated materials so that they can form an opinion of whether or not they were once joined.

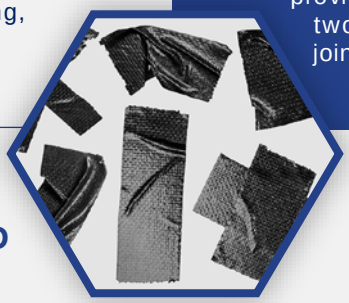
In addition to outlining a general procedure for performing physical fit examinations, this guide provides a summary of considerations and limitations for certain types of materials, including glass, skeletal material, polymers, tape, and textiles, for an examiner to evaluate when conducting these examinations.

This guide does not present comprehensive theories regarding the mechanism of fractures, tearing, cutting, or other methods of separation.

WHY IS THIS STANDARD IMPORTANT? WHAT ARE ITS BENEFITS?

Adherence to the standard provides a consistent approach to forensic physical fit examinations.

Different types of materials exhibit individual characteristics based on their construction, chemical structure, and physical properties. The recognition and distinction between class and individual characteristics for different types of materials allows the use of the same general procedures for the physical fit examinations of all materials. Macroscopic and microscopic evaluation of these characteristics can aid in providing an opinion on whether the two parts physically fit and were once joined.



HOW IS THIS STANDARD USED, AND WHAT ARE THE KEY ELEMENTS?

This guide contains a general procedure, considerations, and limitations to aid FSPs with performing physical fit examinations. The general procedure includes guidance on conducting a macroscopical assessment, including evaluating the condition, general features, and properties. When individual characteristics are not visible at the macroscopic level to support a physical fit, detailed observation at the microscopical level is suggested to compare the edge features of the questioned and known samples. A flow chart of a physical fit examination scheme is provided.

This standard also includes special considerations, including background on the material, how separation occurs, the material's relevant features, other considerations, and other limitations for glass, skeletal material, synthetic polymers, tapes, and textiles.

Guidance on examination documentation, results, interpretation, verifications of physical fits of evidential value, and report wording examples are also included in this standard.

This guide acknowledges the need for an FSP to consider the need for multiple types of examinations (for example, other trace examinations, DNA, latent prints, firearms) and communicate with examiners from other disciplines to coordinate the order of examination or evidence preservation before initiating a physical fit examination.

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