

**DEPARTMENT OF JUSTICE
UNIFORM LANGUAGE FOR TESTIMONY AND REPORTS
FOR THE FORENSIC FIREARMS/TOOLMARKS DISCIPLINE –
FRACTURE MATCH EXAMINATIONS**

I. Application

This document applies to Department of Justice examiners who are authorized to prepare reports and provide expert witness testimony regarding the forensic examination of fractured items for a fracture match conducted in the firearms/toolmarks discipline. This document applies to reports and to testimony based on reports that are finalized after its effective date. Section III is limited to conclusions that result from the examination of fractured items conducted in the forensic firearms/toolmarks discipline to determine if two or more fractured items were originally part of the same object. Section IV is applicable to all forensic firearms/toolmarks discipline examinations unless otherwise limited by the express terms of an individual qualification or limitation.

II. Purpose and Scope¹

The Uniform Language for Testimony and Reports is a quality assurance measure designed to standardize the expression of appropriate consensus language for use by Department examiners in their reports and testimony. This document is intended to describe and explain terminology that may be provided by Department examiners. It shall be attached to, or incorporated by reference in, laboratory reports or included in the case file.

Department examiners are expected to prepare reports and provide testimony consistent with the directives of this document. However, examiners are not required to provide a complete or verbatim recitation of the definitions or bases set forth in this document. This is supplemental information that is intended to clarify the meaning of, and foundation for, the approved conclusions.

This document should not be construed to imply that terminology, definitions, or testimony provided by Department examiners prior to its effective date that may differ from that set forth below was erroneous, incorrect, or indefensible. It should also not be construed to imply that the use of different terminology or definitions by non-Departmental forensic laboratories or individuals is erroneous, incorrect, or indefensible.

This document does not, and cannot, address every contingency that may occur. For example, an examiner may not have an opportunity to fully comply with this document's directives during a testimonial presentation due to circumstances beyond his or her control. In addition, this document does not prohibit the provision of conclusions in reports and testimony that fall outside of its stated scope. Finally, the substantive content of expert testimony may be dependent upon legal rules imposed by the court or jurisdiction in which it is offered.

¹ This document is not intended to, does not, and may not be relied upon to create any rights, substantive or procedural, enforceable by law by any party in any matter, civil or criminal; nor does it place any limitation on otherwise lawful investigative or legal prerogatives of the Department.

III. Conclusions Regarding Examination of Fractured Items Conducted in the Forensic Firearms/Toolmarks Discipline²

The examiner may offer any of the following conclusions:

1. Fracture match
2. Exclusion (i.e., excluded)
3. Inconclusive

Fracture Match

‘Fracture Match’ is an examiner’s conclusion that two or more fractured items were once part of the same object. This conclusion is an examiner’s decision that all observed class characteristics are in agreement and the quality and quantity of corresponding individual characteristics for the fractures is such that the examiner would not expect to find that same combination of individual characteristics repeated in another object and insufficient disagreement in corresponding individual characteristics to conclude they originated from different objects. This conclusion can only be reached when two or more fractured items physically fit together or when a comparison of the corresponding surfaces of the fractured items reveals a fit.

The basis for a ‘fracture match’ conclusion is an examiner’s decision that the observed class characteristics and corresponding individual characteristics of the two or more fractured items provide extremely strong support for the proposition that they were once part of the same object and extremely weak support for the proposition that the fractured items originated from different objects.

A ‘fracture match’ conclusion is the statement of an examiner’s opinion (an inductive inference³) that the probability that two or more fractured items were not part of the same object is so small that it is negligible. A ‘fracture match’ conclusion is not based upon a statistically-derived or verified measurement or an actual comparison to all fractured items in the world.

² An examiner may also conclude that fractured items are not appropriate for a fracture match analysis. Such a conclusion does not preclude a separate analysis, as deemed appropriate.

³ Inductive reasoning (inferential reasoning):

A mode or process of thinking that is part of the scientific method and complements deductive reasoning and logic. Inductive reasoning starts with a large body of evidence or data obtained by experiment or observation and extrapolates it to new situations. By the process of induction or inference, predictions about new situations are inferred or induced from the existing body of knowledge. In other words, an inference is a generalization, but one that is made in a logical and scientifically defensible manner.

OXFORD DICTIONARY OF FORENSIC SCIENCE 130 (Oxford Univ. Press 2012).

Exclusion

'Exclusion' is an examiner's conclusion that two or more fractured items did not originate from the same object.

The basis for an 'exclusion' conclusion is an examiner's decision that two or more fractured items exhibit substantially dissimilar observed characteristics that would not be expected from fractured items that originated from the same object.

Inconclusive

'Inconclusive' is an examiner's conclusion that no determination can be reached as to whether two or more fractured items could have originated from the same object.

The basis for an 'inconclusive' conclusion is an examiner's decision that there is an insufficient quantity and/or quality of observed characteristics to determine whether two or more fractured items could have originated from the same object. Reasons for an 'inconclusive' conclusion include the presence of physical or microscopic similarity that is insufficient to form the conclusion of 'fracture match'; a lack of any observed similarity; or physical or microscopic dissimilarity that is insufficient to form the conclusion of 'exclusion.'

IV. Qualifications and Limitations of Forensic Firearms/Toolmarks Discipline Examinations

- An examiner shall not assert that two or more fractured items were once part of the same object unless they physically fit together or when a microscopic comparison of the surfaces of the fractured items reveals a fit.
- When offering a 'fracture match' conclusion, an examiner shall not assert that two or more fractured items originated from the same source to the exclusion of all other sources. This may wrongly imply that a 'fracture match' conclusion is based upon a statistically-derived or verified measurement or an actual comparison to all other fractured items in the world, rather than an examiner's expert opinion.
- An examiner shall not assert that examinations conducted in the forensic firearms/toolmarks discipline are infallible or have a zero error rate.
- An examiner shall not provide a conclusion that includes a statistic or numerical degree of probability except when based on relevant and appropriate data.
- An examiner shall not cite the number of examinations conducted in the forensic firearms/toolmarks discipline performed in his or her career as a direct measure for the accuracy of a proffered conclusion. An examiner may cite the number of examinations conducted in the forensic firearms/toolmarks discipline performed in his or her career for the purpose of establishing, defending, or describing his or her qualifications or experience.

- An examiner shall not use the expressions ‘reasonable degree of scientific certainty,’ ‘reasonable scientific certainty,’ or similar assertions of reasonable certainty in either reports or testimony unless required to do so by a judge or applicable law.⁴

⁴ See *Memorandum from the Attorney General to Heads of Department Components* (Sept. 9, 2016), <https://www.justice.gov/opa/file/891366/download>.