

ASB Standard 222, First Edition
2026

**Standard for the Articulation of Footwear and Tire
Interpretations**

DRAFT



Standard for the Articulation of Footwear and Tire Interpretations

ASB Approved XXXXXXXX 2026

ANSI Approved XXXXXXXX 2026



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Foreword

This document provides a framework for articulating source opinions for the forensic footwear and tire discipline. This standard describes necessary comparative observations and interpretations and provides a model for articulating qualitative source opinions using an evaluative reporting approach. This standard does not, and cannot, address every contingency that may occur when expressing comparison results.

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This document was revised, prepared, and finalized as a standard by the Footwear and Tire Consensus Body of the AAFS Standards Board. The draft of this standard was developed by the Footwear and Tire Subcommittee of the Organization of Scientific Area Committees (OSAC) for Forensic Science.

Questions, comments, and suggestions for the improvement of this document can be sent to AAFS-ASB Secretariat, asb@aaafs.org or 410 N 21st Street, Colorado Springs, CO 80904.

All hyperlinks and web addresses shown in this document are current as of the publication date of this standard.

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Keywords: *TBD*

Table of Contents *(to be finalized prior to publication)*

- 1 Scope.....
- 2 Normative References.....
- 3 Terms and Definitions.....
- 4 Requirements.....
- Annex A (informative) Bibliography.....

DRAFT

1 Standard for the Articulation of Footwear and Tire Interpretations

2 **1 Scope**

3 This standard provides the requirements for articulating results and interpretations of the
4 comparison of questioned impressions to known footwear and tires. This document also provides
5 descriptions of comparative observations and interpretations of data, and establishes qualitative
6 articulations for the range of results and interpretations that may be reached following footwear
7 and tire evidence comparisons.

8 This standard does not cover results and interpretations derived directly from or entirely
9 dependent upon probability models or quantitative methods, or the determination of the relevant
10 population for evaluation.

11 **2 Normative References**

12 There are no normative reference documents. Annex A, Bibliography, contains informative
13 references.

14 **3 Terms and Definitions**

15 For the purpose of this document, the following terms and definitions apply. Additional relevant
16 terminology can be found in the most recent version of ASB Technical Report 097, *Terminology
17 Used for Forensic Footwear and Tire Evidence*^a as well as in the OSAC Lexicon^b. Unless specified
18 otherwise, definitions included in this document supersede definitions for the same term in
19 previously published ASB standards or in the OSAC Lexicon.

20 **3.1** 21 **articulation**

22 The communication or explanation of the examination and decision-making process to encompass
23 observations and interpretations.

24 **3.2** 25 **characteristics of use**

26 The features that are acquired through the wearing/usage of shoes and tires, to include general
27 wear, specific wear, Schallamach pattern, and randomly acquired characteristics (RACs).

28 **3.3** 29 **correspondence**

30 An interpretation that observed similarities between compared items (e.g., questioned impressions
31 and known footwear or tires) are in agreement.

^a Available from: <https://www.aafs.org/academy-standards-board>

^b Available from: <https://www.nist.gov/glossary/osac-lexicon>

- 32 **3.4**
33 **discriminability**^c
34 **distinctiveness**
35 The property of an observed characteristic or of an item of footwear or tire that distinguishes it
36 from different sources.
- 37 **3.5**
38 **dissimilarity**
39 **dissimilar**
40 An observation that characteristics have the appearance of being potentially different but do not
41 meet the criteria for an exclusionary difference.
- 42 NOTE This observation could be caused by numerous factors including the impression-making process,
43 factors prior to recovery, and/or the recovery process.
- 44 **3.6**
45 **distinguishing characteristic**
46 A feature on a footwear or tire, including manufacturing variables/defects and characteristics of
47 use, that may be used to differentiate the item from others of the same class.
- 48 **3.7**
49 **exclusion**
50 The known footwear or tire exhibits differences in class characteristics or distinguishing
51 characteristics that indicate the footwear or tire did not make the questioned impression and thus
52 is not part of the pool of potential sources for the questioned impression.
- 53 **3.8**
54 **exclusionary difference**
55 A difference in one or more characteristics between compared items that is substantial enough to
56 determine that the compared items did not originate from the same source.
- 57 **3.9**
58 **inclusion**
59 The known footwear or tire exhibits similarities in class characteristics and/or distinguishing
60 characteristics that indicate the footwear or tire may have made the questioned impression and
61 thus is part of the pool of potential sources for the questioned impression.
- 62 **3.10**
63 **item of evidence**
64 The object, sample, image, impression, or document being examined.
- 65 NOTE Items of evidence may be from unknown or known sources.

^c The discriminability of a characteristic includes its shape, size, complexity, and reliability. The discriminability of an impression encompasses its features' quantity, spatial arrangement, quality, and rarity/perceived rarity.

- 66 **3.11**
 67 **measured rarity^d**
 68 The prevalence of a feature or set of features observed in item of evidence estimated using
 69 representative databases, research, and/or manufacturing/distribution information.
- 70 NOTE Very few, if any, such databases currently exist for practical use in footwear or tire evidence.
- 71 **3.12**
 72 **observation**
 73 The recognition and noting of an occurrence.
- 74 NOTE For the purpose of this document, “occurrence” refers to features, attributes, and/or measurements.
- 75 **3.13**
 76 **perceived rarity^a**
 77 An examiner’s assessment of the prevalence of a feature or set of features based upon training,
 78 experience, and/or case factors, in the absence of data (as outlined under “measured rarity”).
- 79 NOTE Perceived rarity is considered during the decision-making process, the examiner must clearly and
 80 thoroughly describe the information considered.
- 81 **3.14**
 82 **quality**
 83 A subjective measure of the character and fidelity of a questioned impression or known item of
 84 footwear or tire, including associated exemplars, both of which determine its value for comparison.
- 85 **3.15**
 86 **similarity**
 87 **similar**
 88 An observation that an impression and an item of footwear or tire share a likeness of details.
- 89 **3.16**
 90 **source**
 91 A specific item of footwear or tire from which an impression originates.
- 92 **3.17**
 93 **source opinion**
 94 An opinion in which an examiner is assessing the degree to which the evidence supports whether
 95 one or more items came from a specified source (e.g., whether a tire impression came from a known
 96 tire or a different tire).

^d Rarity, either measured or perceived, of the class characteristic of make/model and/or size of a footwear or tire refers to how often that type of feature is encountered in a group of footwear or tires (its prevalence), either in isolation or in conjunction with other information about its local context. Rarity of the location and degree of wear as well as the size and shape of randomly acquired characteristics refers to how frequently these types of features are encountered in a group of footwear or tires (their prevalence), either in isolation or in conjunction with other information about local context.

97 **3.18**
98 **specific wear**
99 The discrete wear on an item of footwear or tire that is more distinctive than general wear by virtue
100 of its position, degree, and orientation (e.g., wear in atypical contact areas, Schallamach patterns).

101 **4 Suitability Determinations**

102 **4.1 General**

103 A suitability determination is a judgment made prior to comparison (i.e., prior to examining the
104 known footwear or tire) of whether an item contains sufficient quality and value for a comparison.

105 **4.2 Not Suitable for Comparison**

106 A not suitable for comparison determination is a judgment that a more detailed examination is not
107 warranted. The examiner determined there were minimal or no confirmable or discernable
108 features present. This determination applies when there is insufficient detail to conduct any
109 comparison.

110 **4.3 Suitable for Comparison**

111 A suitable for comparison determination is a judgment that a source opinion can potentially be
112 reached. The examiner determined that the item contains sufficient observed data (e.g., sufficient
113 quality and quantity of features, size, or condition of any items of evidence) to be used for a
114 comparison.

115 **5 Articulation of Source Opinions**

116 **5.1 General**

117 **5.1.1** Source opinions are reported by forensic examiners to communicate the results and
118 interpretations of their comparison and evaluation of two or more items of evidence. These items
119 are generally categorized as one of two types: questioned footwear or tire impressions and known
120 footwear or tires. These results and interpretations are derived using acquired knowledge, training,
121 skills, and experience of the footwear and tire evidence examiner.

122 **5.1.2** Examiners should be mindful regarding the potential impact of human factors, including
123 biases, when conducting their examinations and reaching source opinions

124 **5.1.3** When reaching source opinions, an examiner evaluates the quality, quantity, and
125 discriminability of characteristics in the item of evidence, the persistence of characteristics on the
126 outsole or tread over time and the extent of similarities and dissimilarities of the observed
127 characteristics, while taking into account the measured or perceived rarity of these observed
128 characteristics and any potential limitations of the items. Potential limitations may include:

- 129 — distortion;
- 130 — improper recovery methods;
- 131 — photographic issues;

132 — time delay between deposition and collection.

133 **5.1.4** Examiners shall assess the strength of evidence by considering the prospect of encountering
 134 the observed combination of characteristics if the questioned impression was made by the known
 135 footwear or tire, relative to the prospect of finding the observed combination of characteristics if
 136 the questioned impression was made by a different source.

137 NOTE The size of the pool of other potential sources is typically unknown, but can be expected to decrease as
 138 the number and type of features in correspondence increases.

139 **5.1.5** Examiners shall state their opinions in documentation, reporting, and testimony using the
 140 full articulations in 5.1.6, not merely using the category labels (e.g., “support for source exclusion”).

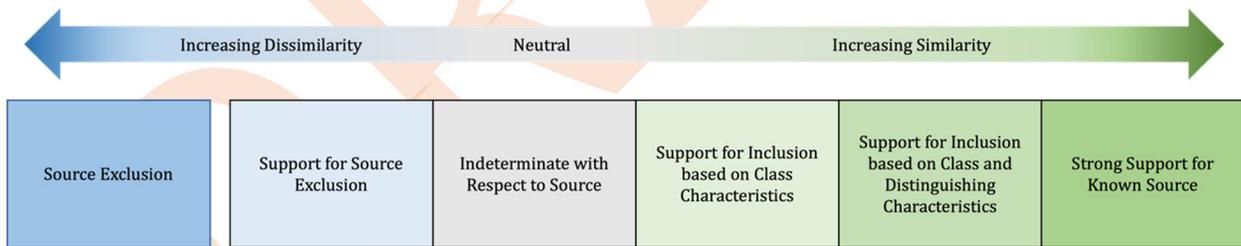
141 **5.1.6** Examiners should provide the entire articulation scale in their documentation and
 142 reporting, as shown in Figure 1.

143 **5.1.7** Examiners shall state their opinions in terms of the support for their observations and
 144 interpretations given the following two propositions.

145 — The known item of footwear or tire made the questioned impression (known source).

146 — A different item of footwear or tire made the questioned impression (different source).

147 Figure 1 shows the articulation of source opinion categories for footwear and tire interpretations.
 148 The descriptions are meant to provide context to the levels of opinions reached in footwear and tire
 149 impression comparisons. The descriptions of each level are not intended to be all inclusive for
 150 every possible observation. Each source opinion is broken down into the required observations, the
 151 appropriate interpretations of said observations, and the necessary articulation to report the given
 152 opinion.



153
 154 NOTE The source opinion categories are displayed as concrete bins across a continuum of observed
 155 similarity or dissimilarity.

156 **Figure 1—Articulation of Source Opinions for Footwear and Tire Interpretations**

157 **5.2 Source Exclusion**

158 **5.2.1 Observations**

159 One or more exclusionary differences were noted in the comparison of class characteristics and/or
 160 distinguishing characteristics between the questioned impression and the known footwear or tire.
 161 Dissimilarities may also be observed.

162 5.2.2 Interpretation

163 5.2.2.1 Source Exclusion is an examiner's opinion that the observed characteristics provide
164 extremely strong support for the proposition that a different footwear or tire made the questioned
165 impression and no support for the proposition that the known footwear or tire made the
166 questioned impression.

167 5.2.2.2 Source Exclusion is expressed using absolutes because there is a logical impossibility that
168 the items came from the same source (e.g., an outsole design composed of zig zags and circles can
169 be definitively excluded as the source of an impression in which only square blocks are apparent).
170 In this scenario, an opinion of source exclusion represents a posterior odds statement in which
171 there is no support for the proposition that the known footwear or tire made the questioned
172 impression.

173 5.2.2.3 Characteristics of use should only be used as the sole observation in forming an opinion of
174 Source Exclusion if the questioned and known items differ significantly in the quality and quantity
175 of characteristics of use and either the known footwear or tire is recovered shortly after the
176 deposition of the impression, the fact that the known item has not changed between deposition and
177 recovery can otherwise be verified, or the nature of the characteristics of use logically preclude
178 alternative interpretations.

179 5.2.3 Articulation

180 5.2.3.1 One or more exclusionary differences were noted in the comparison of class
181 characteristics and/or distinguishing characteristics between the questioned impression and the
182 known footwear or tire to state that the prospect of finding the observed characteristics, if the two
183 items came from the same source, is negligible.

184 5.2.3.2 The examiner shall document observations and interpretations regarding the following:

- 185 a) the specific class characteristics and/or distinguishing characteristics observed in the
186 questioned impression versus the known footwear or tire;
- 187 b) any observed similarities between these characteristics;
- 188 c) any observed dissimilarities between these characteristics, why these were interpreted to be
189 exclusionary differences, and why they were determined to be sufficiently strong to report
190 Source Exclusion; and
- 191 d) the limiting factors that were encountered during the examination and how these limitations
192 were accounted for, evaluated, and/or mitigated.

193 5.3 Support for Source Exclusion

194 5.3.1 Observations

195 The questioned impression exhibits dissimilarities in class characteristics and/or distinguishing
196 characteristics when compared to the known footwear or tire. No exclusionary differences are
197 observed.

198 **5.3.2 Interpretation**

199 **5.3.2.1** Support for Source Exclusion is an examiner's opinion that there are limitations
 200 associated with the observed characteristics or item of evidence (e.g., quality, quantity, availability)
 201 that prevent the examiner from reaching a stronger exclusion but provide support for the
 202 proposition that a different footwear or tire made the questioned impression and weak support for
 203 the proposition that the known footwear or tire made the questioned impression.

204 **5.3.2.2** An opinion of Support for Source Exclusion may be reached if (1) there are observed
 205 dissimilarities in class characteristics and/or distinguishing characteristics and (2) one or more
 206 limiting factors. Limiting factors may include the following:

- 207 a) the questioned impression is partial, fragmented, or distorted;
- 208 b) the quality of the evidence is poor or lacking (e.g., low clarity, damage to the known footwear or
 209 tire or the questioned impression, improper photographic techniques, etc.);
- 210 c) the time between the deposition of the impression and the recovery of the known footwear or
 211 tire may not account for the dissimilarities observed; or
- 212 d) the examiner does not have access to the known footwear or tire (and only has photographs
 213 and/or limited test impressions).

214 **5.3.3 Articulation**

215 **5.3.3.1** The questioned impression exhibits dissimilarities when compared to the known
 216 footwear or tire and provides stronger support for the proposition that the questioned impression
 217 came from a different source than the proposition that the questioned impression came from the
 218 known footwear or tire.

219 **5.3.3.2** The examiner shall document observations and interpretations regarding the following:

- 220 a) the specific class characteristics and/or distinguishing characteristics observed in the
 221 questioned impression versus the known footwear or tire;
- 222 b) any observed similarities between these characteristics;
- 223 c) any observed dissimilarities between these characteristics;
- 224 d) why any observed dissimilarities were interpreted not to be exclusionary differences; and
- 225 e) the limiting factors that were encountered during the examination and how these limitations
 226 were accounted for, evaluated, and/or mitigated.

227 **5.4 Indeterminate with Respect to Source**

228 **5.4.1 Observations**

229 Although the item of evidence was determined to be suitable for comparison, there are significant
 230 limiting factors in the questioned impression and/or known footwear or tire. These factors may
 231 include: partial, fragmented or distorted impression, insufficient information, lack of scale,

232 improper position of scale, improper photographic techniques, differences between the region of
233 the footwear or tire represented in the impression and the submitted known footwear or tire, the
234 number of known footwear or tire items submitted of the same class and their lack of
235 discriminating characteristics, or significant length of time between the date of the occurrence and
236 when the footwear or tires were recovered that could account for a different degree of general
237 wear. No exclusionary differences are observed.

238 **5.4.2 Interpretation**

239 **5.4.2.1** Indeterminate with Respect to Source is an examiner's opinion that the observed
240 characteristics are insufficient or too ambiguous to support any source opinion.

241 **5.4.2.2** In the opinion of the examiner, there was insufficient information and/or significant
242 limiting factors observed in the questioned impression to warrant a meaningful opinion regarding
243 the particular known footwear outsole or tire tread.

244 **5.4.2.3** This opinion only applies to the known footwear or tire that was examined and does not
245 necessarily preclude future examinations with other known footwear or tires.

246 **5.4.3 Articulation**

247 **5.4.3.1** The questioned impression does not exhibit sufficient observable similarities or
248 dissimilarities when compared to the known footwear or tire to provide support for either
249 proposition. The observations provide relatively equivalent support for both known source and
250 different source propositions.

251 **5.4.3.2** The examiner shall document observations and interpretations regarding the following:

252 a) the specific class characteristics and/or distinguishing characteristics observed in the
253 questioned impression;

254 b) how the observed characteristics in the questioned impression compare to those observed on
255 the known footwear or tire;

256 c) any observed similarities and/or dissimilarities between these characteristics and why these
257 were determined to be insufficient to provide stronger support for inclusion or exclusion; and

258 d) the limiting factors that were encountered during the examination.

259 **5.5 Support for Inclusion Based on Class Characteristics**

260 **5.5.1 Observations**

261 The class characteristics of design and physical size, if available, correspond between the
262 questioned impression and the known footwear or tire. Correspondence of general wear may also
263 be observed. Factors limiting the comparison and/or dissimilarities may also be observed. No
264 exclusionary differences are observed.

265 5.5.2 Interpretation

266 5.5.2.1 Support for Inclusion Based on Class Characteristics is an examiner's opinion that the
 267 observed characteristics provide more support for the proposition that the questioned impression
 268 was made by the known footwear or tire than for the proposition that the questioned impression
 269 was made by a different footwear or tire. However, the relative support does not rise to the level
 270 required for a stronger support for inclusion, based upon distinguishing characteristics, for the
 271 known footwear or tire.

272 5.5.2.2 Any other footwear or tire that shares the same class characteristics and general wear
 273 observed in the questioned impression are also included in the pool of possible sources.

274 5.5.2.3 Limiting factors may be present, such as: limited detail, insufficient RACs, improper
 275 photographic techniques, distortion, or significant lengths of time between the date of the
 276 occurrence and when the footwear or tires were recovered that could account for dissimilar
 277 characteristics of use.

278 5.5.2.4 Any observed dissimilarities shall be interpreted as explainable by the examiner (i.e., no
 279 exclusionary differences are observed).

280 5.5.3 Articulation

281 5.5.3.1 The questioned impression and known footwear or tire correspond in class
 282 characteristics (design and size, if available). Correspondence of general wear may also be
 283 observed. The observed characteristics of the items provide more support for the proposition that
 284 the questioned impression was made by the known footwear or tire than for the proposition that
 285 the questioned impression came from a different source. Other footwear or tires with the class
 286 characteristics observed in the impression are included as possible sources.

287 5.5.3.2 The examiner shall document observations and interpretations regarding the following:

- 288 a) the class characteristics observed in the questioned impression and the known footwear or tire;
- 289 b) any observed similarities between these characteristics and why these were interpreted to be
 290 correspondences;
- 291 c) any observed dissimilarities between these characteristics and why these were interpreted to
 292 be explainable;
- 293 d) the limiting factors that were encountered during the examination and how these limitations
 294 were accounted for, evaluated, and/or mitigated;
- 295 e) any differences in general wear between the questioned and known are explainable by case
 296 circumstances (e.g., time delay between deposition and collection).

297 5.6 Support for Inclusion Based on Class and Distinguishing Characteristics

298 5.6.1 Observations

299 The questioned impression and known footwear or tire correspond in all observed class
 300 characteristics (design and size). Correspondence of general wear and/or manufacturing

301 variables/defects may also be observed. There is also specific wear and/or one or more randomly
302 acquired characteristics in correspondence. Factors limiting the comparison and/or dissimilarities
303 may also be observed. No exclusionary differences are observed.

304 **5.6.2 Interpretation**

305 **5.6.2.1** Support for Inclusion Based on Class and Distinguishing Characteristics is an examiner's
306 opinion that the observed characteristics provide substantially more support for the proposition
307 that the questioned impression was made by the known footwear or tire than for the proposition
308 that the questioned impression was made by a different footwear or tire. However, the relative
309 support does not rise to the level required for Strong Support for Known Source.

310 **5.6.2.2** Any other footwear or tire that shares the same class characteristics and distinguishing
311 characteristics observed in the questioned impression are also included in the pool of possible
312 sources.

313 **5.6.2.3** Limiting factors may be present, such as: limited detail, insufficient RACs, improper
314 photographic techniques, distortion or significant lengths of time between the date of the
315 occurrence and when the footwear or tires were recovered that could account for dissimilar
316 characteristics of use.

317 **5.6.2.4** Any observed dissimilarities shall be interpreted as explainable by the examiner (i.e., no
318 exclusionary differences are observed).

319 **5.6.3 Articulation**

320 **5.6.3.1** The questioned impression and the known footwear or tire share agreement of all class
321 characteristics and one or more distinguishing characteristics. These corresponding characteristics
322 offer substantially more support for the proposition that the questioned impression came from the
323 known footwear or tire than for the proposition that the questioned impression came from a
324 different source.

325 **5.6.3.2** Other footwear or tires with the same class characteristics observed in the impression are
326 included in the pool of possible sources only if they display the same distinguishing characteristics
327 observed in the questioned impression.

328 **5.6.3.3** The examiner shall document observations and interpretations regarding the following:

- 329 a) the class characteristics and distinguishing characteristics observed in the questioned
330 impression and the known footwear or tire;
- 331 b) any observed similarities between these characteristics and why these were interpreted to be
332 correspondences;
- 333 c) explanation of why the observed similarities and correspondences were not sufficient to report
334 Strong Support for Known Source;
- 335 d) any observed dissimilarities between these characteristics and why these were interpreted to
336 be explainable; and

337 e) the limiting factors that were encountered during the examination and how these limitations
338 were accounted for, evaluated, and/or mitigated.

339 **5.7 Strong Support for Known Source**

340 **5.7.1 Observations**

341 The questioned impression and the known footwear or tire correspond in all observed class
342 characteristics and distinguishing characteristics, including one or more randomly acquired
343 characteristics of high quality and combined discriminability. Minor dissimilarities may also be
344 observed. No exclusionary differences were observed.

345 **5.7.2 Interpretation**

346 **5.7.2.1** Strong Support for Known Source is an examiner's opinion that the observed
347 characteristics provide overwhelmingly more support for the proposition that the questioned
348 impression was made by the known footwear or tire than for the proposition that the questioned
349 impression was made by a different footwear or tire. There is extremely weak support for the
350 proposition that the questioned impression was made by a different footwear or tire.

351 **5.7.2.2** Other footwear or tires with the same class characteristics and distinguishing
352 characteristics observed in the questioned impression are included in the pool of possible sources,
353 which is exceedingly small in the opinion of the examiner given the quantity, quality, and
354 discriminability of the observed corresponding characteristics.

355 **5.7.2.3** Any observed dissimilarities shall be interpreted as explainable by the examiner (i.e., no
356 exclusionary differences are observed).

357 **5.7.3 Articulation**

358 **5.7.3.1** The questioned impression and the known footwear or tire share agreement of class
359 characteristics and distinguishing characteristics, including one or more RACs of high quality
360 and/or discriminability. The observed characteristics provide overwhelmingly more support for
361 the proposition that the questioned impression came from the known footwear or tire than for the
362 proposition that the questioned impression came from a different source.

363 **5.7.3.2** The examiner shall explicitly detail observations and interpretations regarding the
364 following:

365 a) the specific class characteristics and distinguishing characteristics observed in the questioned
366 impression and the known footwear or tire;

367 b) any observed similarities between these characteristics and why these were interpreted to be
368 correspondences;

369 c) explanation of why the observed similarities and correspondences were sufficiently strong to
370 report Strong Support for Known Source;

371 d) any observed dissimilarities between these characteristics and why these were interpreted to
372 be explainable; and

373 e) the limiting factors that were encountered during the examination and how these limitations
374 were accounted for, evaluated, or mitigated.

375 **5.7.3.3** This opinion shall not be expressed using absolutes such as “to the exclusion of all other
376 sources” or “100% certainty.”

377 **6 General Considerations**

378 **6.1** Proper documentation of the source opinions detailed herein provides transparency and aids
379 in the interpretation of the observations.

380 **6.2** Documentation of an examiner’s observations and interpretations should be balanced, logical,
381 robust, thorough, and transparent and shall explicitly describe the bases for all source opinions,
382 acknowledging limitations of the information available to the examiner, and disclosing contextual
383 information or assumptions, if any, used. All source opinions require such documentation.

384 **6.3** All source opinions outlined in this document, with the exception of Source Exclusion, refer to
385 whether evidence supports the known source or different source propositions. These opinions do
386 not refer to the chances that evidence items originate from a known source or from a different
387 source. This is beyond the scope of the examiner’s responsibilities. An opinion of source exclusion is
388 the only category that permits communicating opinions in absolutes and reflects a statement about
389 the truth of the different source proposition: there is no support for the proposition that the known
390 footwear or tire made the questioned impression.

391 **7 Qualifications and Limitations**

392 **7.1** When articulating footwear and tire interpretations in reports and testimony, the examiner
393 shall adhere to the following limitations, unless specifically prohibited from doing so during judicial
394 proceedings.

395 **7.2** An examiner shall:

396 a) acknowledge that a source opinion provided in a report or during testimony is ultimately an
397 examiner’s opinion and is not based upon a comparison to all other footwear or tire items;

398 b) not assert that a “strong support for known source” is based on the “uniqueness” of an item of
399 evidence;

400 c) not use the terms “individualize”, “individualization”, “identification”, or “match” when
401 describing a source opinion;

402 d) not assert that a known item made an impression with absolute or 100% certainty or use the
403 expressions “reasonable degree of scientific certainty,” “reasonable scientific certainty,” or
404 similar assertions of reasonable certainty in either reports or testimony;

405 e) not assert that a known item made an impression to the exclusion of all other footwear or tires;

406 f) not provide an “inclusion” opinion without explaining that other footwear or tires with similar
407 characteristics could have also made the impression(s);

- 408 g) not assert or infer that footwear or tire examinations are infallible or have a zero-error rate;
- 409 h) not provide an opinion that includes a numerical estimate of probability or a statistically
410 derived measurement except when based on appropriate data;
- 411 i) qualify any statements of feature rarity or prevalence by explicitly specifying the data used (if
412 available) or acknowledging the subjectivity in the estimation of perceived rarity; and
- 413 j) not cite the number of forensic footwear or tire examinations performed in their career as a
414 direct measure for the accuracy of a reported opinion.

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Annex A (informative)

Bibliography

The following bibliography is not intended to be an all-inclusive list, review, or endorsement of literature on this topic. The goal of the bibliography is to provide publications cited informationally, and publications relevant to the standard.

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