

OSAC 2022-N-0010 Standards for Development of an Accredited Bloodstain Pattern Analyst Certification Program

*Bloodstain Pattern Analysis Subcommittee
Physics/Pattern Interpretation Scientific Area Committee
Organization of Scientific Area Committees (OSAC) for Forensic Science*





Draft OSAC Proposed Standard

OSAC 2022-N-0010 Standards for Development of an Accredited Bloodstain Pattern Analyst Certification Program

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Bloodstain Pattern Analysis
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1 **Standards for Development of an Accredited Bloodstain Pattern Analyst Certification Program**

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3

4 **1 Foreword**

5

6 A bloodstain pattern analyst certification program is a means to ensure the competency,
7 reliability, and quality of the work product of a bloodstain pattern analyst. This document
8 provides guidance in the preparation and participation in an accredited certification program for
9 the discipline of bloodstain pattern analysis (BPA) and for bodies providing certification
10 examination programs. Administration of the process shall be governed and conducted by an
11 International Organization for Standardization (ISO) accredited body.

12

13 **2 Scope**

14

15 This document targets those persons who have successfully completed the “Standards for a
16 Bloodstain Pattern Analyst’s Training Program, ANSI/ASB Standard 032, 1st Edition, 2020”
17 planning to pursue BPA certification and for those entities providing the certification
18 examination program. Administration of the process shall be governed and conducted by an
19 ISO accredited body while the certification scheme owner shall be a standard development
20 organization (SDO).

21

22 **3 Normative References**

23

24 Standards for a Bloodstain Pattern Analyst’s Training Program, ANSI/ASB Standard 032, 1st
25 Edition, 2020 (http://www.asbstandardsboard.org/wp-content/uploads/2020/05/032_Std_e1.pdf).

26

27 **4 Terms and Definitions**

28

29 **4.1 Terms**

30

31 The following terms are meant to convey the meanings specified.

32

33 **4.1.1**

34 **shall** - used to indicate that a provision is mandatory (unless otherwise documented for non-
35 compliance).

36

37 **4.1.2**

38 **should** - used to indicate that a provision is not mandatory but recommended as good practice.

39

40 **4.2 Definitions**

41

42 For purposes of this document, the following definitions and acronyms apply.

43

44 **4.2.1**

45 **applicant** - person who has submitted an application for admission into the certification
46 process.

47

48 **4.2.2**

49 **assessment** - process that evaluates a person's fulfilment of the requirements of the
50 certification scheme.

51

52 **4.2.3**

53 **bloodstain pattern analyst** - An individual who has successfully completed the training program
54 set forth in "Standards for a Bloodstain Pattern Analyst's Training Program, ANSI/ASB Standard
55 032, 1st Edition, 2020".

56

57 **4.2.4**

58 **candidate** - applicant who has fulfilled specified prerequisites and has been admitted to the
59 certification process.

60

61 **4.2.5**

62 **certificate** - document issued by the certification exam provider indicating that the named
63 person has fulfilled the certification requirements.

64

65 **4.2.6**

66 **certification** - the process by which a person is tested with regard to knowledge, skill and ability
67 and deemed competent to reliably practice the discipline for which they have been certified.

68

69 **4.2.7**

70 **certification process** - activities by which the certification exam provider determines that a
71 person fulfils certification requirements, including application, assessment, and certification,
72 recertification.

73

74 **4.2.8**

75 **certification scheme** - competence and other requirements related to specific occupational or
76 skilled categories of persons.

77

78 **4.2.9**

79 **certification requirements** - set of specified requirements, including requirements of the
80 scheme to be fulfilled in order to establish or maintain certification.

81

82 **4.2.10**

83 **Competency** - demonstration that a forensic science practitioner has acquired and
84 demonstrated specialized knowledge, skills, and abilities in the standard practices necessary to
85 conduct examinations in a discipline or category of testing prior to performing independent
86 casework.

87

88 **4.2.11**

89 **examination** - mechanism that is part of the assessment which measures a candidate's
90 competence by one or more means, such as written, oral, practical, and observational, as
91 defined in the certification scheme.

92

93 **4.2.12**

94 **examiner** - person competent to conduct and score an examination, where the examination
95 requires professional judgement.

96

97 **4.2.13**

98 **forensic science practitioner** - an individual who (1) applies scientific or technical practices to
99 the recognition, collection, analysis, or interpretation of evidence for criminal and civil law or
100 regulatory issues, and (2) issues test results, provides reports, or provides interpretations,
101 conclusions, or opinions through testimony with respect to such evidence.

102

103 **4.2.14**

104 **knowledge, skills, and abilities (KSA)** - the level of information, qualifications, and experience
105 needed to perform assigned tasks.

106

107 **4.2.15**

108 **proctor** - person, authorized by the certification exam provider, who administers or supervises
109 a certification test, but does not evaluate the competency of the candidate.

110

111 **5 Job and Task Description**

112

113 Bloodstain pattern analysis involves documentation, evaluation, and analysis of bloodstain
114 patterns; specifically, the size, shape, distribution, appearance, and location of the bloodstains,
115 as well as the surfaces upon which the blood was deposited. The bloodstain pattern analyst
116 uses their knowledge, skills, training, and experience to evaluate the bloodstain(s) and relevant
117 case evidence through application of the scientific method.

118

119 **6 Application and Administration**

120 Application and administration of the certification program shall be the responsibility of the
121 certification exam provider.

122

123 **6.1 Application Process**

124

125 **6.1.1**

126 The applicant shall file an application in accordance with the [certification examination](#)
127 [provider's requirements](#).

128

129 **6.1.2**

130 The applicant shall provide proof of having successfully completed the "Standards for a
131 Bloodstain Pattern Analyst's Training Program, ANSI/ASB Standard 032, 1st Edition, 2020".

132

133 **6.2 Assessment Process**

134

135 **6.2.1**

136 The certification process shall consist of five examination components developed by
137 certified bloodstain pattern analysts. All certification examinations shall be proctored.

138

139 **6.2.1.1**

140 Proctor is approved and designated by the certification exam provider.

141

142 **6.2.1.2**

143 Candidate has eight (8) hours to complete the examination. The examination shall be divided
144 into the following five components:

145

146 **6.2.1.2.1**

147 Pattern Classification: classify a minimum of twenty (20) bloodstain patterns.

148

149 **6.2.1.2.2**

150 Practical Exercise: a minimum of 1 (one) Area of Convergence/Area of Origin Determination.

151

152 **6.2.1.2.3**

153 Comprehensive Scene Exercise: a section to test the candidate's analytical abilities regarding
154 BPA principles where the candidate is provided bloodstain photographs and investigative
155 questions. There shall be a minimum of ten (10) scenarios.

156

157 **6.2.1.2.4**

158 Written Examination: consisting of a minimum of 150 multiple choice and true-false questions.
159 The written examination shall include the topic areas below with the questions apportioned as
160 follows:

161

162 **6.2.1.2.4.1**

163 Properties of blood

164

165 **6.2.1.2.4.1.1**

166 Composition

167

168 **6.2.1.2.4.1.2**

169 Clotting

170

171 **6.2.1.2.4.1.3**

172 Drying

173

174 **6.2.1.2.4.2**

175 Physics

176

177	6.2.1.2.4.2.1
178	Surface tension
179	
180	6.2.1.2.4.2.2
181	Viscosity
182	
183	6.2.1.2.4.2.3
184	Target surface
185	
186	6.2.1.2.4.2.4
187	Forces
188	
189	6.2.1.2.4.2.4.1
190	Gravity
191	
192	6.2.1.2.4.2.4.2
193	Air Resistance/Aerodynamic Drag
194	
195	6.2.1.2.4.2.4.3
196	External forces
197	
198	6.2.1.2.4.2.4.4
199	Adhesive/Cohesive properties
200	
201	6.2.1.2.4.2.5
202	Flight Patterns
203	
204	6.2.1.2.4.2.6
205	Newton's Laws
206	
207	6.2.1.2.4.2.7
208	Cast-off Mechanism
209	
210	6.2.1.2.4.3
211	Mathematical Equations
212	
213	6.2.1.2.4.3.1
214	Basic Trigonometry
215	
216	6.2.1.2.4.4
217	Interaction with fabrics
218	
219	6.2.1.2.4.4.1
220	Woven vs. knit fabric composition

221	
222	6.2.1.2.4.4.2
223	Awareness of distortion of bloodstain on fabric
224	
225	6.2.1.2.4.5
226	Pattern Classification
227	
228	6.2.1.2.4.6
229	Documentation
230	
231	6.2.1.2.4.6.1
232	Photography
233	
234	6.2.1.2.4.6.1.1
235	Bloodstain Patterns
236	
237	6.2.1.2.4.6.1.2
238	Road mapping
239	
240	6.2.1.2.4.6.1.3
241	Bloodstain Evidence
242	
243	6.2.1.2.4.6.2
244	Sketching
245	
246	6.2.1.2.4.6.3
247	Notes
248	
249	6.2.1.2.4.7
250	Terminology
251	
252	6.2.1.2.4.8
253	Report Writing
254	
255	6.2.1.2.4.9
256	Bias in BPA
257	
258	6.2.1.2.4.10
259	Ethics in BPA
260	
261	6.2.1.2.4.11
262	Recognition of Staged Scenes
263	
264	6.2.1.2.4.12

265	Standards of evidence
266	
267	6.2.1.2.4.13
268	History
269	
270	6.2.1.2.4.14
271	Safety/PPE Consideration
272	
273	6.2.1.2.4.15
274	Circulatory System
275	
276	6.2.1.2.4.16
277	Serological/DNA considerations
278	
279	6.2.1.2.4.17
280	Wound Dynamics
281	
282	6.2.1.2.4.17.1
283	External Injuries
284	
285	6.2.1.2.4.17.2
286	Internal Injuries
287	
288	6.2.1.2.4.18
289	Detection/Enhancement/Collection
290	
291	6.2.1.2.4.19
292	Chemical
293	
294	6.2.1.2.4.20
295	ALS/IR
296	
297	6.2.1.3
298	Legal issues shall be tested on in the written exam portion. Suggested topics to be tested on are
299	issues surrounding qualification and admissibility of the analyst and evidence and notable cases
300	to the bloodstain pattern analysis community.
301	
302	6.2.1.3.1
303	Voir dire
304	
305	6.2.1.3.2
306	Discovery and disclosure
307	
308	6.2.1.3.3

309 Frye and Daubert Standard

310

311 6.2.1.3.4

312 Federal Rules of Evidence

313

314 6.2.1.3.5

315 Landmark Court Decisions

316

317 6.2.1.3.6

318 Notable bloodstain pattern analysis cases

319

320 **6.2.2**

321 Assessment scoring shall adhere to the following guidance:

322

323 **6.2.2.1**

324 The minimum passing score on the written and pattern identification examination components
325 shall be established by the certification exam provider. The recommended minimum passing
326 score for both is 75%. The practical exercise and the comprehensive scene exercise shall be
327 graded on a pass/fail basis.

328

329 **6.2.2.2**

330 If a candidate fails any one of the five components of the certification examination, the
331 certification exam provider shall require a six-month waiting period to apply to retake the failed
332 component. The six-month waiting period starts on the date the candidate was notified of their
333 assessment score by the certification exam provider.

334

335 **6.2.2.3**

336 If a candidate fails two or more components of the certification examination, the certification
337 exam provider shall require a 12-month waiting period to apply to retake the entire
338 examination (all five components). The 12-month waiting period starts on the date the
339 candidate was notified of their assessment score by the certification test provider.

340

341 **7 Recertification Criteria**

342

343 **7.1**

344 Certification shall be in effect for a period of five years from the date of issue. Application and
345 administration of the recertification scheme shall be the responsibility of the certification exam
346 provider.

347

348 **7.2**

349 The certification exam provider shall establish a minimum requirement for annual continuing
350 education. It is recommended that there is an average of 8 hours of continuing education per
351 year for a period of 5 years.

352

353 **7.3**

354 Applicants for recertification shall be required to:

355

356 **7.3.1**

357 Provide proof of continued involvement in the bloodstain pattern analysis discipline.

358 Documentation of continued involvement in the bloodstain pattern analysis discipline shall be
359 defined by the certification exam provider.

360

361 **7.3.2**

362 Participate in an examination demonstrating continued competency in the area of bloodstain
363 pattern analysis. The examination shall consist of the following three components:

364

365 **7.3.2.1**

366 Pattern classification: classify ten (10) bloodstain patterns.

367

368 **7.3.2.2**

369 Practical Exercise: 1 (one) Area of Convergence/Area of Origin Determination utilizing Tangent
370 Method.

371

372 **7.3.2.3**

373 Comprehensive Scene Exercise: a section to test the candidate's analytical abilities regarding
374 BPA principles where the candidate is provided bloodstain photographs and investigative
375 questions. There shall be a minimum of ten (10) scenarios.

376

377 **7.3.2.4**

378 All recertification examinations shall be proctored.