

SLOVENSKI STANDARD
oSIST prEN 50980-1:2019
01-januar-2019

Naprave za daljinsko nadzorovanje alkohola - Preskusne metode in zahtevane lastnosti - 1. del: Instrumenti za ocenjevalne programe

Remote alcohol monitoring devices - Test methods and performance requirements - Part 1: Instruments for assessment programmes

Geräte zur Fernüberwachung von Alkoholkonsum - Prüfverfahren und Anforderungen an das Betriebsverhalten - Teil 1: Geräte in Beurteilungsprogrammen

[SIST EN 50980-1:2020](https://standards.iteh.ai/catalog/standards/sist/e06b19a1-44a4-4009-ac8c-e675878b93e/sist-en-50980-1-2020)

[https://standards.iteh.ai/catalog/standards/sist/e06b19a1-44a4-4009-ac8c-](https://standards.iteh.ai/catalog/standards/sist/e06b19a1-44a4-4009-ac8c-e675878b93e/sist-en-50980-1-2020)

Ta slovenski standard je istoveten z: prEN 50980-1:2018

ICS:

13.200	Preprečevanje nesreč in katastrof	Accident and disaster control
--------	-----------------------------------	-------------------------------

oSIST prEN 50980-1:2019

en

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 50980-1

November 2018

ICS

English Version

**Remote alcohol monitoring devices - Test methods and
performance requirements - Part 1: Instruments for assessment
programmes**

To be completed

Geräte zur Fernüberwachung von Alkoholkonsum -
Prüfverfahren und Anforderungen an das Betriebsverhalten
- Teil 1: Geräte zur Bewertung von Programmen

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2019-02-08.

It has been drawn up by CLC/BTTF 116-2.

If this draft becomes a European Standard, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CENELEC in three official versions (English, French, German).
A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

European foreword	5
Introduction	6
1 Scope	7
2 Normative references	7
3 Terms and definitions	8
4 General requirements	11
4.1 Objectives	11
4.2 Mouthpiece	11
4.3 Breath alcohol concentration limit	11
4.4 Breath test request	12
4.5 User interface	12
4.6 Test request	12
4.7 Retry breath sample	12
4.8 Repeat test request	12
4.9 Data memory records	12
4.10 Communication integrity	13
4.11 Tampering and circumvention	13
4.12 Service notification	13
4.13 Programme notification	13
4.14 Battery status	13
4.15 Calibration interval	13
4.16 Combination with other systems	13
5 General test methods	14
5.1 Samples	14
5.2 Preparation of remote alcohol monitoring devices before testing	14
5.3 Functional status classification	14
5.3.1 General	14
5.3.2 Class A	14
5.3.3 Class B	14
5.3.4 Class C	14
5.3.5 Class D	14
5.3.6 Class E	15
5.4 Sequence of tests	15
5.4.1 Remote Alcohol Monitoring Device	15
5.4.2 Optional elements	15
5.4.3 Communication Testing	15
5.5 Normal conditions for tests	15
5.6 Functional test	16
6 Electrical tests	16
6.1 Excess supply voltage	16
6.2 Short-circuit	17
6.3 Reversed polarity	17
6.4 Electrical disturbances	17
6.4.1 Supply lines	17
6.4.2 Lines other than supply lines	17
6.5 Electrostatic discharge	18

48	6.6	Electromagnetic compatibility	18
49	7	Calibration curve	18
50	8	Durability tests	18
51	8.1	General	18
52	8.2	Temperature cycles	18
53	8.3	Condensed water	20
54	8.4	Vibrations	20
55	8.4.1	General	20
56	8.4.2	Random vibrations	20
57	8.4.3	Vibration at fixed frequency	20
58	8.5	Drop test	21
59	8.6	Mechanical Shock	21
60	9	Environmental tests	21
61	9.1	General	21
62	9.2	Temperature	21
63	9.2.1	General	21
64	9.2.2	Operation within the specified temperature range	22
65	9.2.3	Operation outside the specified temperature range	22
66	9.3	Temperature and humidity	22
67	9.4	Start-up time	22
68	9.5	Battery life	22
69	9.6	Pressure	23
70	9.7	Protection by enclosure	23
71	10	Breath sample	23
72	10.1	Volume	23
73	10.2	Flow	23
74	10.3	Exhalation time	24
75	10.4	Response time	24
76	11	Analytical specificity	24
77	11.1	Test gases	24
78	11.2	Cigarette smoke	24
79	12	Circumvention and tampering	25
80	12.1	General	25
81	12.2	Pressurized air	25
82	12.3	Provision of the sample with a mouthpiece attached	25
83	12.4	Provision of the sample without a mouthpiece attached	26
84	12.5	Obstruction of the mouthpiece	26
85	12.6	Filter	26
86	12.7	Condensation	26
87	12.8	Water	27
88	12.9	Low power behaviour	28
89	12.10	Disconnection of components	28
90	13	Documentation and identity verification	28
91	13.1	Documentation	28
92	13.1.1	Image capture	28
93	13.1.2	Characteristics of the image	28
94	13.1.3	Environmental lighting conditions	30
95	13.2	Image processing	30
96	13.2.1	General	30

97	13.2.2	Face detection	30
98	13.2.3	Missing Face on image	30
99	13.3	Identification	30
100	14	Timer and Intervals	30
101	14.1	Test schedule	30
102	14.1.1	User initiated test	30
103	14.1.2	Scheduled test	30
104	14.1.3	Test on demand	30
105	14.2	Service reminder	31
106	14.3	Calibration interval	31
107	15	Long term behaviour.....	31
108	16	Instructions.....	31
109	16.1	Instructions for use.....	31
110	16.2	Instructions for servicing the remote alcohol monitoring device	33
111	17	Test report.....	33
112	18	Labelling and marking	33
113	Annex A (normative) Description of events.....		34
114	Annex B (informative) Performance testing		37
115	Bibliography.....		38

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50980-1:2020

<https://standards.iteh.ai/catalog/standards/sist/e06b19a1-44a4-4009-ac8c-afa75878b93e/sist-en-50980-1-2020>

118 **European foreword**

119 This document (prEN 50980-1:2018) has been prepared by CLC/BTTF 116-2 "Alcohol Interlocks".

120 This document is currently submitted to the enquiry.

121 The following dates are proposed:

- | | | |
|---|-------|---|
| - Latest date by which the existence of this document has to be announced at national level. | (doa) | dor + 6 months |
| - latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | dor + 12 months |
| - latest date by which the national standards conflicting with this document have to be withdrawn | (dow) | dor + 36 months
(to be confirmed or
modified when voting) |

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50980-1:2020

<https://standards.iteh.ai/catalog/standards/sist/e06b19a1-44a4-4009-ac8c-afa75878b93e/sist-en-50980-1-2020>

122 Introduction

123 The purpose of remote alcohol monitoring devices is to monitor the compliance of persons subject to
124 mandatory or voluntary programmes focused on monitoring alcohol consumption.

125 The purpose of prEN 50980-1 is to specify essential performance requirements and to provide the
126 respective test methods for available technologies. The technology of remote alcohol monitoring
127 devices continues to evolve, and further innovations can be expected. These could be considered in
128 new parts or revisions of this European Standard.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50980-1:2020

<https://standards.iteh.ai/catalog/standards/sist/e06b19a1-44a4-4009-ac8c-afa75878b93e/sist-en-50980-1-2020>

1 Scope

This document specifies performance requirements and test methods for remote alcohol monitoring devices that use breath alcohol testing technology. It covers remote alcohol monitoring devices having a mouthpiece and which are intended to be used by participants in programmes designed to monitor alcohol consumption.

This document is directed at test laboratories and manufacturers of remote alcohol monitoring devices. It defines requirements and test procedures for type testing.

Several parameter settings (such as alcohol concentration, breath volume or units of measurement) are specified in this document for the purpose of type testing according to this standard only. However, it may be necessary due to national regulations or depending on user requests to set the values of the prescribed parameter settings differently when the remote alcohol monitoring devices are in use.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50436-6, *Alcohol interlocks - Test methods and performance requirements - Part 6: Data security*

EN 60068-2-1, *Environmental testing - Part 2-1: Tests - Test A: Cold* (IEC 60068-2-1)

EN 60068-2-2, *Environmental testing - Part 2-2: Tests - Test B: Dry heat* (IEC 60068-2-2)

EN 60068-2-6, *Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)* (IEC 60068-2-6)

EN 60068-2-27, *Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock* (IEC 60068-2-27)

EN 60068-2-31, *Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens* (IEC 60068-2-31)

EN 60068-2-64, *Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance* (IEC 60068-2-64)

EN 60068-2-78, *Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state* (IEC 60068-2-78)

EN 60529, *Degrees of protection provided by enclosures (IP Code)* (IEC 60529)

ISO 7637-2, *Road vehicles — Electrical disturbances from conduction and coupling — Part 2: Electrical transient conduction along supply lines only*

ISO 7637-3, *Road vehicles — Electrical disturbances from conduction and coupling — Part 3: Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines*

ISO 10605, *Road vehicles — Test methods for electrical disturbances from electrostatic discharge*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

remote alcohol monitoring device

device or system that measures the breath alcohol concentration of a person in an unsupervised environment and which provides means for identification of the person providing the breath sample and means of data communication in a secure format

Note 1 to entry: Devices can be fixed, mobile or portable and may be a system consisting of more than one element.

3.2

breath alcohol concentration

mass concentration of ethanol, expressed in mg/l (milligram ethanol per litre breath), in a breath sample delivered into a remote alcohol monitoring device

3.3

breath alcohol concentration limit

set value of the breath alcohol concentration at or above which the remote alcohol monitoring device will register a failed breath test

3.4

mouthpiece

part that is fitted to the remote alcohol monitoring device through which the subject under test provides the breath specimen

Note 1 to entry: A mouthpiece is used to prevent the breath sample from being mixed with ambient air and thus diluting the alcohol concentration.

3.5

breath sample

breath sample taken under forced expiration

3.6

accepted breath sample

breath sample fulfilling set requirements for volume, flow, exhalation time and other human breath sample characteristics

Note 1 to entry: The acceptance of a breath sample is independent from its alcohol concentration.

3.7

breath test

provision of an accepted breath sample to a remote alcohol monitoring device

3.8

passed breath test

breath test whereby the subject under test has provided an accepted breath sample with a breath alcohol concentration below the breath alcohol concentration limit

3.9

failed breath test

breath test whereby the subject under test has provided an accepted breath sample with a breath alcohol concentration equal to or above the breath alcohol concentration limit

208	3.10
209	test time interval
210	period of time following a test request within which the subject under test shall provide an accepted
211	breath sample
212	3.11
213	missed breath test
214	absence of the provision of an accepted breath sample within the test time interval
215	3.12
216	ready for test
217	condition whereby the remote alcohol monitoring device is able to accept a breath test
218	3.13
219	error state
220	condition whereby the remote alcohol monitoring device detects an internal system non conformity
221	that may cause the device not to function according to specification and normal function is suspended
222	3.14
223	breath test request
224	signal to alert the subject that a breath test is required
225	3.14.1
226	repeat test request
227	additional breath test request following a failed breath test
228	3.14.2
229	subject initiated test request
230	breath test request initiated by the subject
231	3.14.3
232	test on demand request
233	breath test request initiated by an external authority through communication with the remote alcohol
234	monitoring device
235	3.14.4
236	scheduled test request
237	breath test request initiated according to a fixed or random time schedule
238	3.15
239	retry breath sample
240	additional breath sample request following a not accepted breath sample
241	3.16
242	programme authority
243	responsible authority for monitoring the compliance of the subject using a remote alcohol monitoring
244	device
245	3.17
246	compliance
247	act of conformance of the subject to the requirements of the programme
248	3.18
249	non-compliance
250	act of non-conformance of the subject to the requirements of the programme

- 251 **3.19**
 252 **circumvention**
 253 manipulation of a breath test, subject identification and/or data communication for the purpose of
 254 achieving programme compliance
- 255 **3.20**
 256 **tampering**
 257 unauthorised change to or interference with the remote alcohol monitoring device or its function
- 258 **3.21**
 259 **supply voltage**
 260 voltage as obtained from the electrical power source (mains or battery) for the operation of the remote
 261 alcohol monitoring device
- 262 **3.22**
 263 **nominal operation voltage U_n**
 264 supply voltage as specified by the manufacturer for the normal operation of the device
- 265 **3.23**
 266 **stability period**
 267 period of time over which the remote alcohol monitoring device fulfils the stability requirements for the
 268 measurement of breath alcohol concentration
- 269 **3.24**
 270 **calibration interval**
 271 set time period after calibration, verification or adjustment following which the remote alcohol
 272 monitoring device will request the next calibration, verification or adjustment
- 273 **3.25**
 274 **working day**
 275 working day means Monday to Friday inclusive, and does not include public holidays and weekends
 276 Note 1 to entry: For the purposes of this standard, assume a 5 day working week.
- 277 **3.26**
 278 **calibration adjustment**
 279 set of operations carried out on a remote alcohol monitoring device so that it provides correct breath
 280 alcohol concentration results within the accepted tolerances
- 281 **3.27**
 282 **service**
 283 service is the sum of actions that are necessary to maintain the proper function of the remote alcohol
 284 monitoring device
- 285 **3.28**
 286 **verification test**
 287 test of the remote alcohol monitoring device with a gas sample of known alcohol concentration to
 288 determine the proper function of the device and the accuracy of the alcohol sensor response within the
 289 stability requirements
- 290 **3.29**
 291 **service notification**
 292 notification to alert the subject that a service or inspection of the remote alcohol monitoring device is
 293 required
- 294 **3.30**
 295 **programme notification**
 296 notification to alert a subject of a special request from the programme authorities

- 297 **3.31**
 298 **data memory record**
 299 record of breath test results and other events with date, time and other parameters stored in the
 300 memory of the remote alcohol monitoring device
- 301 **3.32**
 302 **data communication**
 303 transmission of data to or from the remote alcohol monitoring device
- 304 **3.33**
 305 **security target**
 306 description and analysis of the assets, the threats to those assets, the countermeasures (in the form of
 307 security objectives) and a demonstration that the countermeasures are sufficient to counter the threats
- 308 **3.34**
 309 **manufacturer**
 310 person or organisation responsible for the design, construction and production of the remote alcohol
 311 monitoring device
- 312 **3.35**
 313 **g_n**
 314 standard acceleration due to the earth gravitational field, which varies with altitude and geographical
 315 latitude
- 316 Note 1 to entry: For the purposes of this standard, the value of g_n is rounded to the nearest whole number,
 317 that is 10m/s²
- 318 **3.36**
 319 **operational state**
 320 state in which the remote alcohol device is powered and ready to operate and to communicate. It may
 321 be in a low power consumption mode
- 322 **4 General requirements**
- 323 **4.1 Objectives**
- 324 The remote alcohol monitoring device shall monitor the compliance of persons participating in
 325 mandatory or voluntary programmes focused on monitoring alcohol consumption. This shall be
 326 achieved through the recurrent measurement of breath alcohol concentration as well as means for
 327 subject identification and data communication.
- 328 **4.2 Mouthpiece**
- 329 The remote alcohol monitoring device shall have an exchangeable mouthpiece for the delivery of the
 330 breath sample that shall prevent the breath sample from mixing with ambient air.
- 331 The mouthpiece shall be hygienically wrapped.
- 332 **4.3 Breath alcohol concentration limit**
- 333 The nominal breath alcohol concentration limit of the remote alcohol monitoring device shall not be
 334 lower than 0,09 mg/l.
- 335 NOTE There is a limitation for the lower limit of the detection of alcohol concentrations in breath due to
 336 technological and physiological reasons. Consequently, the lowest limit for a reliable measurement of breath
 337 alcohol concentration is 0,09 mg/l.