
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

Dispositifs de contrôle à distance de l'alcoolémie - Méthodes d'essai et exigences de performance - Partie 1: Instruments pour les programmes d'évaluation

[SIST EN 50980-1:2020](https://standards.iteh.ai/catalog/standards/sist/e06b19a1-44a4-4009-ac8c-a9758781b93e/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-a9758781b93e/sist-en-50980-1-2020)

Ta slovenski standard je istoveten z: EN 50980-1:2019

ICS:

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

SIST EN 50980-1:2020**en**

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>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 50980-1

November 2019

ICS 71.040.40

English Version

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

Dispositifs de contrôle à distance de l'alcoolémie -
Méthodes d'essai et exigences de performance - Partie 1:
Instruments pour les programmes d'évaluation

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

This European Standard was approved by CENELEC on 2019-09-09. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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 Retry breath sample	12
4.7 Repeat test request	12
4.8 Data memory records	12
4.9 Communication integrity	13
4.10 Tampering and circumvention	13
4.11 Service notification	13
4.12 Programme notification	13
4.13 Battery status	13
4.14 Calibration interval	13
4.15 Combination with other systems	14
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	15
5.3.5 Class D	15
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	17
6.1 Excess supply voltage	17
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	18
6.5 Electrostatic discharge	18
6.6 Electromagnetic compatibility	18

7	Calibration curve	18
8	Durability tests	19
8.1	General	19
8.2	Temperature cycles	19
8.3	Condensed water	20
8.4	Vibrations	20
8.4.1	General	20
8.4.2	Random vibrations	20
8.4.3	Vibration at fixed frequency	20
8.5	Drop test	21
8.6	Mechanical shock	21
9	Environmental tests	21
9.1	General	21
9.2	Temperature	22
9.2.1	General	22
9.2.2	Operation within the specified temperature range	22
9.2.3	Operation outside the specified temperature range	22
9.3	Temperature and humidity	22
9.4	Start-up time	22
9.5	Battery life	23
9.6	Pressure	23
9.7	Protection by enclosure	23
10	Breath sample	23
10.1	Volume	23
10.2	Flow	24
10.3	Exhalation time	24
10.4	Response time	24
11	Analytical specificity	24
11.1	Test gases	24
11.2	Cigarette smoke	25
12	Circumvention and tampering	25
12.1	General	25
12.2	Pressurized air	25
12.3	Provision of the sample with a mouthpiece attached	25
12.4	Provision of the sample without a mouthpiece attached	26
12.5	Obstruction of the mouthpiece	26
12.6	Filter	26
12.7	Condensation	27
12.8	Water	27
12.9	Low power behaviour	28
12.10	Disconnection of components	29
13	Documentation and identity verification	29
13.1	Documentation	29
13.1.1	Image capture	29
13.1.2	Characteristics of the image	29
13.1.3	Environmental lighting conditions	31
13.2	Image processing	31
13.2.1	General	31
13.2.2	Face detection	31

13.2.3	Missing face on image	31
13.3	Identification	31
14	Timer and intervals	31
14.1	Test schedule	31
14.1.1	User initiated test	31
14.1.2	Scheduled test	31
14.1.3	Test on demand	31
14.2	Service reminder	31
14.3	Calibration interval	32
15	Long term behaviour.....	32
16	Instructions.....	32
16.1	Instructions for use.....	32
16.2	Instructions for servicing the remote alcohol monitoring device	34
17	Test report.....	34
18	Labelling and marking	34
Annex A (normative)	Description of events	35
Annex B (informative)	Performance testing	38
Bibliography.....		39

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>

European foreword

This document (EN 50980-1:2019) has been prepared by CLC/BTTF 116-2 “Alcohol Interlocks”.

The following dates are fixed:

- latest date by which this document has (dop) 2020-09-09
to be implemented at national level by
publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2022-09-09
standards conflicting with this document
have to be withdrawn

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>

Introduction

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

The purpose of EN 50980-1 is to specify essential performance requirements and to provide the respective test methods for available technologies. The technology of remote alcohol monitoring devices continues to evolve, and further innovations can be expected. These could be considered in 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 60068-2-1:2007, *Environmental testing — Part 2-1: Tests — Test A: Cold* (IEC 60068-2-1:2007)

EN 60068-2-2:2007, *Environmental testing — Part 2-2: Tests — Test B: Dry heat* (IEC 60068-2-2:2007)

EN 60068-2-6, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal)* (IEC 60068-2-6)
<https://standards.iteh.ai/catalog/standards/sist/e06b19a1-44a4-4009-ac8c-afa75878b93e/sist-en-50980-1-2020>

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

EN 60068-2-30:2005, *Environmental testing — Part 2-30: Tests — Test Db: Damp heat, cyclic (12 h + 12 h cycle)* (IEC 60068-2-30:2005)

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

3.10**test time interval**

period of time following a test request within which the subject under test shall provide an accepted breath sample

3.11**missed breath test**

absence of the provision of an accepted breath sample within the test time interval

3.12**ready for test**

condition whereby the remote alcohol monitoring device is able to accept a breath test

3.13**error state**

condition whereby the remote alcohol monitoring device detects an internal system non conformity that may cause the device not to function according to specification and normal function is suspended

3.14**breath test request**

signal to alert the subject that a breath test is required

3.14.1**repeat test request**

additional breath test request following a failed breath test

3.14.2**subject initiated test request**

breath test request initiated by the subject

3.14.3**test on demand request**

breath test request initiated by an external authority through communication with the remote alcohol monitoring device

3.14.4**scheduled test request**

breath test request initiated according to a fixed or random time schedule

3.15**retry breath sample**

additional breath sample request following a not accepted breath sample

3.16**programme authority**

responsible authority for monitoring the compliance of the subject using a remote alcohol monitoring device

3.17**compliance**

act of conformance of the subject to the requirements of the programme

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>

3.18**non-compliance**

act of non-conformance of the subject to the requirements of the programme

3.19**circumvention**

manipulation of a breath test, subject identification and/or data communication for the purpose of achieving programme compliance

3.20**tampering**

unauthorised change to or interference with the remote alcohol monitoring device or its function

3.21**supply voltage**

voltage as obtained from the electrical power source (mains or battery) for the operation of the remote alcohol monitoring device

3.22**nominal operation voltage**

supply voltage as specified by the manufacturer for the normal operation of the device

3.23**calibration interval**

set time period after calibration, verification or adjustment following which the remote alcohol monitoring device will request the next calibration, verification or adjustment

3.24**calibration adjustment**

set of operations carried out on a remote alcohol monitoring device so that it provides correct breath alcohol concentration results within the accepted tolerances

3.25**service**

service is the sum of actions that are necessary to maintain the proper function of the remote alcohol monitoring device

3.26**verification test**

test of the remote alcohol monitoring device with a gas sample of known alcohol concentration to determine the proper function of the device and the accuracy of the alcohol sensor response within the stability requirements

3.27**service notification**

notification to alert the subject that a service or inspection of the remote alcohol monitoring device is required

3.28**programme notification**

notification to alert a subject of a special request from the programme authorities

3.29**data memory record**

record of breath test results and other events with date, time and other parameters stored in the memory of the remote alcohol monitoring device

3.30**data communication**

transmission of data to or from the remote alcohol monitoring device

3.31**manufacturer**

person or organisation responsible for the design, construction and production of the remote alcohol monitoring device

3.32 **g_n**

standard acceleration due to the earth gravitational field, which varies with altitude and geographical latitude

Note 1 to entry: For the purposes of this standard, the value of g_n is rounded to the nearest whole number, that is 10 m/s².

3.33**operational state**

state in which the remote alcohol device is powered and ready to operate and to communicate. It may be in a low power consumption mode

4 General requirements**4.1 Objectives**

The remote alcohol monitoring device shall monitor the compliance of persons participating in mandatory or voluntary programmes focused on monitoring alcohol consumption. This shall be achieved through the recurrent measurement of breath alcohol concentration as well as means for subject identification and data communication.

4.2 Mouthpiece

The remote alcohol monitoring device shall have an exchangeable mouthpiece for the delivery of the breath sample that shall prevent the breath sample from mixing with ambient air.

The mouthpiece shall be hygienically wrapped.

4.3 Breath alcohol concentration limit

The nominal breath alcohol concentration limit of the remote alcohol monitoring device shall not be lower than 0,09 mg/l.

NOTE There is a limitation for the lower limit of the detection of alcohol concentrations in breath due to technological and physiological reasons. Consequently, the lowest limit for a reliable measurement of breath alcohol concentration is 0,09 mg/l.