



SLOVENSKI STANDARD SIST EN 50131-13:2020

01-julij-2020

Alarmni sistemi - Sistemi za javljanje vloma in ropa - 13. del: Varnostne pirotehnične zamegljevalne naprave

Alarm systems - Intrusion and hold-up systems - Part 13: Security Pyrotechnic Obscuration Devices

Alarmanlagen - Einbruch- und Überfallmeldeanlagen - Teil 13: Pyrotechnisches Verrauchungs-Gerät

Systèmes d'alarme - Systèmes d'alarme contre l'intrusion et les hold-up - Partie 13: Dispositifs de sécurité pyrotechniques à pouvoir opacifiant

<https://standards.iteh.ai/catalog/standards/sist/938c3b37-0997-47c2-a46e-b79553247b23/sist-en-50131-13-2020>

Ta slovenski standard je istoveten z: EN 50131-13:2020

ICS:

13.310	Varstvo pred kriminalom	Protection against crime
13.320	Alarmni in opozorilni sistemi	Alarm and warning systems

SIST EN 50131-13:2020

en,fr

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50131-13:2020

<https://standards.iteh.ai/catalog/standards/sist/938c3b37-0997-47c2-a46e-b79553247b23/sist-en-50131-13-2020>

EUROPEAN STANDARD

EN 50131-13

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2020

ICS 13.320

English Version

Alarm systems - Intrusion and hold-up systems - Part 13: Pyrotechnic Obscuration Security Devices

Systèmes d'alarme - Systèmes d'alarme contre l'intrusion et
les hold-up - Partie 13: Dispositifs de sécurité
pyrotechniques à pouvoir opacifiant

Alarmanlagen - Einbruch- und Überfallmeldeanlagen - Teil
13: Pyrotechnisches Verrauchungs-Gerät

This European Standard was approved by CENELEC on 2020-01-27. 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.

(standards.iteh.ai)

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.

<https://standards.iteh.ai/catalog/standards/sist/938c3b37-0997-47c2-a46c-b79553247b23/sist-en-50131-13-2020>



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

EN 50131-13:2020 (E)

Contents	Page
European foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms, definitions and abbreviations	6
3.1 Terms and definitions.....	6
3.2 Abbreviations	7
4 Functionality	8
5 POD construction	8
5.1 General.....	8
5.2 IP/IK rating	8
6 Security grade	8
7 Environmental performance	8
7.1 General Requirements	8
7.2 Environmental and EMC Requirements.....	8
8 Technical requirements	9
8.1 Pyrotechnic technology	9
8.2 Functional requirements.....	9
9 Safety	14
9.1 Non-toxicity	14
9.2 Residue	14
9.3 Consumables	14
10 Documentation	15
11 Marking	15
12 Design, installation, operation and maintenance	15
13 Testing and verification	15

13.1 General	15
13.2 Test conditions	16
13.3 Operation	17
13.4 Performance tests	17
13.5 Tampering tests	18
13.6 Testing interconnections	20
13.7 Power supply.....	21
13.8 Environmental tests.....	21
13.9 Marking and documentation.....	22
Annex A (normative) Performance tests.....	24
Annex B (normative) Obscuration security device warning sign.....	29
Annex C (informative) Guidance on design, installation, operation and maintenance of the pyrotechnic obscuration security device	31
Bibliography.....	33

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50131-13:2020

<https://standards.iteh.ai/catalog/standards/sist/938c3b37-0997-47c2-a46e-b79553247b23/sist-en-50131-13-2020>

EN 50131-13:2020 (E)**European foreword**

This document (EN 50131-13:2020) has been prepared by CLC/TC 79, "Alarm systems".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-01-27
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2023-01-27

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

The series EN 50131 will consist of the following parts, under the general title "*Alarm systems – Intrusion and hold-up systems*":

Part 1	System requirements
Part 2–2	Intrusion detectors – Passive infrared detectors
Part 2–3	Requirements for microwave detectors
Part 2–4	Requirements for combined passive infrared and microwave detectors
Part 2–5	Requirements for combined passive infrared and ultrasonic detectors
Part 2–6	Opening contacts (magnetic)
Part 2–7-1	Intrusion detectors – Glass break detectors (acoustic)
Part 2–7-2	Intrusion detectors – Glass break detectors (passive)
Part 2–7-3	Intrusion detectors – Glass break detectors (active)
Part 3	Control and indicating equipment
Part 4	Warning devices
Part 5–3	Requirements for interconnections equipment using radio frequency techniques
Part 6	Power supplies
Part 7	Application guidelines
Part 8	Security fog devices
Part 13	Pyrotechnic Obscuration Security Devices

Introduction

This document applies to a Pyrotechnic obscuration security device. This document is part of the Intruder and Hold-up Alarm System (I&HAS) standard series.

The purpose of a pyrotechnic obscuration security device is to reduce the visibility in a protected area by the use of a non-toxic pyro obscuration system in order to form a barrier between the criminal and the criminal's intended target.

This document is intended to define the requirements of a security Pyrotechnic Obscuration Security Device and to set up performance criteria in order to comply with the purpose described above.

Pyrotechnic obscuration security devices are not explosives, they produce smoke by combustion.

Pyrotechnic obscuration security device differs from Fog obscuration devices in the generation and mean of obscuration. The safety requirements for pyrotechnical products (marketing, transport, manipulation, disposal...) are set forth in European regulation. This document is not intended to provide with criteria to assess the compliance with these regulations.

This document has been designed to be flexible enough to encourage and encompass future developments in the field of security obscuration device.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 50131-13:2020](https://standards.iteh.ai/catalog/standards/sist/938c3b37-0997-47c2-a46e-b79553247b23/sist-en-50131-13-2020)

<https://standards.iteh.ai/catalog/standards/sist/938c3b37-0997-47c2-a46e-b79553247b23/sist-en-50131-13-2020>

EN 50131-13:2020 (E)**1 Scope**

This document specifies the requirements for pyrotechnic obscuration security devices as a part of an IAS. It covers application and performance and specifies the necessary tests and trials to ensure efficiency and reliability of such obscuration devices.

This document is not intended to cover Hold-up alarm systems, standalone or vehicular security pyrotechnic obscuration security device.

This document also gives guidelines on the criteria for design, installation, operation and maintenance of security pyrotechnic obscuration security device.

NOTE This document does not deal with CE marking, chemical (REACH/CLP) or transport regulation requirements for pyrotechnical devices set forth in the relevant European regulation and harmonized standards issued for this purpose.

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 16263-3, *Pyrotechnic articles - Other pyrotechnic articles - Part 3: Categories and types*

EN 50130-4, *Alarm systems - Part 4: Electromagnetic compatibility - Product family standard: Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems*

EN 50130-5, *Alarm systems - Part 5: Environmental test methods*

EN 50131-1, *Alarm systems - Intrusion and hold-up systems - Part 1: System requirements*

EN 50131-5-3, *Alarm systems - Intrusion systems - Part 5-3: Requirements for interconnections equipment using radio frequency techniques*

EN 50131-6, *Alarm systems - Intrusion and hold-up systems - Part 6: Power supplies*

CLC/TS 50131-7, *Alarm systems - Intrusion and hold-up systems - Part 7: Application guidelines*

EN 60068-2-75, *Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests*

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

EN 60730 (series), *Automatic electrical controls for household and similar use*

EN 61508 (series), *Functional safety of electrical/electronic/programmable electronic safety-related systems*

EN 62262, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

3 Terms, definitions and abbreviations**3.1 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 50131-1 and the following 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 <https://www.iso.org/obp>

3.1.1**critical failure**

error that affects the intended use of overall functionality and cause its malfunctioning

3.1.2**verified intrusion**

signals or messages emanating from two or more independent intrusion detectors that has been activated, indicating there is a high probability that a genuine intrusion or genuine attempted intrusion has occurred within a specified timeframe

3.1.3**verified alarm**

alarm considered genuine as a result of the use of alarm verification

[SOURCE: CLC/TS 50131-9:2014, 3.1.16]

3.1.4**alarm verification**

process to provide information additional to a notified alarm, which increases the probability that the alarm should be considered genuine

[SOURCE: EN 50518-3:2013]

3.1.5**obscuration**

reduction in visibility as a result of the activation of a Pyrotechnic obscuration security device

3.1.6**protected area**

designated space in which the pyrotechnic obscuration security device is designed to reduce the visibility when operated

3.1.7**pyrotechnic obscuration security device**

device or a series of separate independent components that make up a device (i.e. pyrotechnical consumable plus electronic device to command it) that, when activated, produces, by a pyrotechnic reaction, a dense smoke, to reduce visibility within the protected area

3.1.8**verification**

process whereby an intrusion event is confirmed

3.2 Abbreviations

For the purposes of this document, the abbreviations given in EN 50131-1 and the following apply.

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
BIT	Built-In Test
CIE	Control and Indicating equipment
CLP	Regulation on classification, labelling and packaging of substances and mixtures
EMC	Electromagnetic compatibility
	IAS
FMECA	Failure Mode, Effects and criticality Analysis
FTA	Fault Tree Analysis

EN 50131-13:2020 (E)

IAS	Intruder Alarm System(s)
IK	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts
IP	Ingress protection classification
LEA	Law Enforcement Authority (Police or governmental body that responds to activations from security systems)
OECD	Organization for Economic Co-operation and Development
POD	Pyrotechnic Obscuration Device
REACH	European Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals
RF	Radiofrequency
RSSI	Received Signal Strength Indicator

4 Functionality

POD key functionality is to reduce visibility in the protected area as a result of its activation. Additionally, POD shall comply with functionalities described in 8.2.

5 POD construction**5.1 General**

POD may be in a single housing or be distributed in multiple housings (see 3.1.7).

Provision shall be made to allow adequate fixing of the housing to the mounting surface to comply with environmental and tamper requirements.

5.2 IP/IK rating

All component parts shall be housed in an enclosure meeting at least the requirements at 8.2.4.

6 Security grade

The POD shall be declared to comply with one of the security grades according to EN 50131-1 and shall meet all the requirements of that grade.

7 Environmental performance**7.1 General Requirements**

POD shall attain environmental classification II or III or IV, according to EN 50131-1. Environmental class shall be specified by the manufacturer.

7.2 Environmental and EMC Requirements

For all grades, the POD shall meet the performance requirements of this document when subject to the EMC conditions and severity levels defined in EN 50130-4.

EMC emissions are covered by EC Regulatory Directives Under the environmental (climatic, mechanic and EMC) conditions, POD shall continue to function normally as described in 13.8.

8 Technical requirements

8.1 Pyrotechnic technology

Pyrotechnic module shall meet the criteria set forth in Table 1. Compliance with these requirements shall be verified by examination of the documentation indicated in Table 1 and supplied by the manufacturer.

ONU assigned to that type of products is ONU 0432.

Table 1 — Pyrotechnic product requirements

Requirement	Document to evidence compliance
Category P1 pyrotechnic article according to EN 16263-3	CE type-examination certificate issued by a Notified Body under directive 2013/29/EC
Classification 1.4, compatibility group S according to ADR.	Certificate issued by a competent entity, stating ADR classification.
Performance: duration	Individual POD (Pyrotechnic component) shall cease the ejection of smoke within two minutes after activation

8.2 Functional requirements

8.2.1 Input / Output signals

8.2.1.1 Inputs

The minimum information considered as an INPUT to the security POD:

- Trigger: signal to start up the device.
- Verification: signal to confirm the alarm event has been verified.
- Reset: signal to reset to standby mode.

8.2.1.2 Outputs

The minimum information considered as an OUTPUT from the security POD:

- Activation of the pyrotechnic obscuration security device;
- Supervision: Shall send a supervision message with the frequency defined by EN 50131-1:2006, 8.8 elsewhere the CIE monitors the POD supervision information. It shall include the following information:
 - Device identification;
 - Battery voltage;
 - Tamper status;
 - Temperature
 - RSSI level (RF only);
 - Periodic BIT result;
 - Tamper;
 - BIT Tamper;
 - Failure;

EN 50131-13:2020 (E)

- Over temperature;
- Unique security key generated during learning process.

8.2.1.3 Signals processing

Intruder, tamper and fault signals or messages shall be processed according to EN 50131-1. Manufacturer shall document the input and output signals and how they are implemented.

8.2.2 Operation

POD shall be activated only after verified alarm.

POD shall not be activated when the IAS is in the unset condition.

Access to the functions of a POD shall be restricted according to the requirements of EN 50131-1 (access levels). Manufacturer shall document how the equipment complies with this requirement.

The POD shall be capable of communicating with the host IAS.

There might be non-critical failures. These may be transmitted as a separate signal or message. Additional inputs/outputs may be provided (e.g. fire alarm inhibit).

8.2.3 Performance

When tested according to Annex A, the POD shall attain the following performance characteristics in Table 2:

Table 2 — Performance

Performance	T id	Grade 1	Grade 2	Grade 3	Grade 4
Reduction of visibility to 1 m in seconds ^a	T0	from 90 to 180	from 60 to 120	from 30 to 60	from 15 to 30
Maintaining obscuration (to 1 m) during at least in minutes ^b	T1	5	10	15	20
Maintaining obscuration (to 2 m) during at least in minutes	T2	15	30	45	60
Maintaining obscuration (to 3 m) during at least in minutes	T3	30	60	90	120
NOTE Tolerances are specified in Annex A.					
^a Reduction of visibility to 1m since the POD is activated till the 1 m marker is not visible as established in Annex A.					
^b It is admitted that 1 m black marks are visible, but not grey ones.					

The POD shall produce smoke that provides obscuration within the protected area according to the manufacturer's specification.

This specific performance figures shall be provided by the Declaration of Performance (see Clause 10).

8.2.4 Housing protection

The construction of the housing(s) shall meet:

- at least the impact requirements for IK 08 (according to EN 62262);
- at least the protection level IP 20 (according to EN 60529).