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Alarm systems - Intrusion systems -- Part 7: Application guidelines

Alarm systems - Intrusion systems -- Part 7: Application guidelines

Alarmanlagen - Einbruchmeldeanlagen -- Teil 7: Anwendungsregeln

Systèmes d'alarme - Systèmes d'alarme intrusion -- Partie 7: Guide d'application

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13.320	Alarmni in opozorilni sistemi	Alarm and warning systems

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**Alarm systems –
Intrusion systems
Part 7: Application guidelines**

Systemes d'alarme–
Systemes d'alarme intrusion
Partie 7: Guide d'application

Alarmanlagen –
Einbruchmeldeanlagen
Teil 7: Anwendungsregeln

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of this Technical Specification was prepared by the Technical Committee CENELEC TC 79, Alarm systems.

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The following date was fixed:

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Introduction

These application guidelines are intended to provide advice relating to the design, installation, operation and maintenance of Intruder Alarm Systems (IAS). The purpose of this document is to ensure, as far as is practical, that IAS provide the required performance with a minimum of unwanted alarms.

NOTE Clause 12 includes requirements relating to the operation of IAS.

These application guidelines are set out in the logical order in which an IAS would normally be designed and installed. Each procedure is set out separately in the guideline but it is accepted that, in practice, some of the procedures may be carried out simultaneously. Annex J describes in the form of a flowchart the main processes and documentation included in this application guideline.

Those responsible for the design, installation, operation and maintenance of IAS should be conversant with other European Specifications relating to IAS, particularly those relating to system performance, control and indicating equipment, detectors, warning devices, power supplies and alarm transmission systems.

These application guidelines are set out in seven main clauses; a brief explanation of each section is shown below:

- Clause 7 - System design

This clause is intended to assist those responsible for designing IAS to design IAS suitable for the premises to be supervised in relation to the perceived risk(s). The design of the IAS will depend on many factors all of which will influence the design of the IAS to a greater or lesser degree. Consideration of these factors will result in a system design proposal for an IAS with the appropriate extent, security grade and environmental class.

- Clause 8 - Installation planning [SIST-TS CLC/TS 50131-7:2004](https://standards.iteh.ai/catalog/standards/sist/2b8c3241-436e-4336-9d12-1e0175e40c04)
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This clause is intended to help those responsible for installing the IAS by highlighting issues which should be considered prior to commencing the installation of the IAS.

- Clause 9 - System installation

In this clause guidance is given with regard to issues arising during the installation of the IAS. This clause is intended to ensure the IAS is correctly installed as specified at the design stage.

- Clause 10 - Inspection, test, commissioning and acceptance

In this clause guidance is given on issues arising after the IAS has been installed. The clause is intended to ensure the IAS has been installed as specified and also provides the level of performance intended at the design stage. Guidance is also provided with regard to the proper commissioning and handing over of the system to the user and to the documents, records and operating instructions which should be provided.

- Clause 11 - Documentation and records

This clause describes the documentation which should be provided to the client on completion of the IAS. The documents are intended to provide a history of modifications to the IAS, based on the As Fitted document, prepared when the IAS installation was completed.

The records are intended to chronicle any corrective action carried out following unwanted alarm conditions and details of any repairs or modifications to the IAS. The record should also include details of temporary disconnections.

- Clause 12 Operation

This clause describes the responsibility of the client or user of the IAS to properly maintain the IAS and to ensure it is operated correctly.

- Clause 13 - Maintenance and repair

This clause describes how the IAS should be maintained and repaired to ensure the IAS continues to provide the level of performance intended at the design stage.

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1 Scope

These application guidelines include guidance on the design, planning, operation, installation, commissioning and maintenance of IAS installed in buildings. Requirements for IAS are specified in EN 50131-1.

These application guidelines are intended to assist those responsible for establishing the need for an IAS to ascertain the appropriate design of the IAS both in terms of the extent of the supervision required and in determining the grade of system performance necessary to provide the degree of supervision considered appropriate.

These application guidelines are also intended to assist those responsible for selecting equipment appropriate to both the level of performance required and the environmental conditions in which the equipment will be required to operate.

These application guidelines are relevant to all classes and grades of IAS of any size and complexity. This application guideline should be read in conjunction with EN 50131-1.

NOTE It has been assumed in the drafting of these application guidelines that the execution of its provisions will be entrusted to appropriately qualified and experienced persons. However the guidance is also appropriate to other persons who may be required to purchase or use an IAS.

2 Normative references

This Technical Specification incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Technical Specification only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 50131-1:1997, *Alarm systems, Intrusion systems — Part 1: General requirements*

EN 50014:1997, *Electrical apparatus for Potentially explosive atmospheres General requirements*

3 Definitions and abbreviations

For the purpose of this Technical Specification the following definitions and abbreviations apply.

3.1 Definitions

3.1.1

active detector

detector capable of comparing input signals with pre-defined criteria (speed/frequency/amplitude/direction) prior to generating an alarm signal or message

3.1.2

alarm

warning of the presence of a hazard to life, property or the environment

3.1.3

alarm receiving centre

continuously manned centre to which information concerning the status of one or more alarm systems is reported

3.1.4**alarm company**

organization which provides services for alarm systems

3.1.5**alarm condition**

condition of an alarm system or part thereof, which results from the response of the system to the presence of a hazard

3.1.6**alarm system**

electrical installation which responds to the manual or automatic detection of the presence of a hazard

3.1.7**alarm transmission system**

equipment and network used to transfer information concerned with the state of one or more alarm systems to one or more alarm receiving centre

NOTE Transmission systems exclude local direct connections, i.e. interconnections between parts of an alarm system which do not require an interface to transform the alarm system information into a form suitable for transmission.

3.1.8**ancillary control equipment**

equipment used for supplementary control purposes

3.1.9**as fitted document**

document in which details of the IAS actually installed are recorded

3.1.10**control and indicating equipment**

equipment for receiving, processing, controlling, indicating and initiating, the onward transmission of information

3.1.11**commissioning**

putting an IAS into operational mode

3.1.12**client**

individual or corporate body responsible for acquiring the IAS

3.1.13**detector**

device designed to generate an intruder alarm signal or message in response to the sensing of an abnormal condition indicating the presence of a hazard

3.1.14**documentation**

paperwork (or other media) prepared during the design, installation, commissioning and hand over of the IAS recording details of the IAS

3.1.15**entry/exit route**

route by which authorized entry or exit to the supervised area may be achieved

3.1.16**equipment schedule**

list of equipment to be installed or actually installed

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3.1.17**fault condition**

condition of an alarm system which prevents the IAS or parts thereof from functioning normally

3.1.18**final exit point**

point at which the user enters or leaves the supervised premises

EXAMPLE: entrance door to supervised premises.

3.1.19**installation company**

company responsible for installing the IAS

3.1.20**installation plan**

document describing the methodology to be followed during the installation of the IAS

3.1.21**installer**

individual or individuals responsible for carrying out the installation process

3.1.22**intruder alarm system**

alarm system to detect and indicate the presence, entry or attempted entry of an intruder into supervised premises

3.1.23**interconnection**

means by which messages and/or signals are transmitted between IAS components

3.1.24**isolation**

status of a part of an alarm system in which an alarm condition cannot be notified, such status remaining until deliberately cancelled

3.1.25**non-active detector**

detector which does not include any electronic components

EXAMPLE: a mechanical switch or contact.

3.1.26**non-specific wired interconnection**

interconnection conveying information pertaining to two or more applications

3.1.27**normal condition**

state of an IAS system where no conditions exist which would prevent the setting of the IAS

3.1.28**notification**

passing of an alarm, tamper or fault condition to warning devices and/or alarm transmission systems

3.1.29**operational mode**

state of an alarm when it is complete, commissioned and ready for use

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3.1.30**power supply**

that part of an alarm system which provides power for the IAS or any part thereof

3.1.31**response authority**

designated authority with responsibility for attending the supervised premises following an alarm and taking the appropriate action

3.1.32**set**

status of an IAS or part thereof in which an alarm condition can be notified

3.1.33**specific wired interconnection**

interconnection conveying information pertaining to one application

3.1.34**specifier**

individual or corporate body responsible for stipulating the requirements the IAS will be required to meet

3.1.35**subsystem**

that part of an IAS located in a clearly defined part of the supervised premises capable of independent operation

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3.1.36**supervised premises**

that part of a building and/or area in which a hazard may be detected by an alarm system

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3.1.37**system components**

individual items of equipment which make an IAS when configured together

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3.1.38**system record**

history of alarm conditions, faults or modifications to the IAS

EXAMPLE: a Log Book.

3.1.39**tamper**

deliberate interference with an IAS or part thereof

3.1.40**tamper alarm**

alarm generated by tamper detection

3.1.41**tamper condition**

condition of an alarm system in which tampering has been detected

3.1.42**tamper protection**

methods or means used to protect an alarm system or part thereof against deliberate interference

3.1.43**technical survey**

inspection of the premises to be supervised, carried out after the proposal has been accepted, to verify the selection, location and siting of system components and to consider the selection of components in relation to the environmental conditions to which the system components will be exposed

3.1.44**unset**

status of an IAS or part thereof in which an alarm condition cannot be notified

3.1.45**user**

person authorized to operate an alarm system

3.1.46**unknown alarm**

alarm for which the cause cannot be positively identified

3.1.47**unwanted alarm**

alarm conditions not generated by an intrusion or attempted intrusion into the supervised premises

3.1.48**warning device**

device that gives an alarm or an alert

3.1.49**wire-free interconnection**

interconnection conveying information between IAS components without physical media. The interconnection may convey information pertaining to two or more applications

3.1.50**zone**

assessed area where abnormal conditions may be detected

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3.2 Abbreviations

In this Application Guideline the following abbreviations are used:

ARC	— Alarm Receiving Centre
ACE	— Ancillary Control Equipment
ATE	— Alarm Transmission Equipment
ATS	— Alarm Transmission System
CIE	— Control and Indicating Equipment
IAS	— Intruder Alarm System(s)
PS	— Power Supply
WD	— Warning Device
PIR	— Passive Infra-Red

4 Grade of IAS

The grade of the IAS will depend upon the performance required as determined during the risk assessment and location survey.

An IAS may include IAS components of differing grades when divided into clearly defined sub-systems. When the IAS is divided into sub-systems, each sub-system may be of a different grade. The grade of a sub-system shall be that of the lowest graded component within it.

Components shared by more than one sub-system should have a grade equal to that of the highest sub-system grade.

EXAMPLE: control and indicating equipment, alarm transmission system, warning devices and power supplies.

4.1 Grading structure

EN 50131-1 describes four grades of performance which should be considered when selecting equipment. These are as follows:

4.1.1 Grade 1: Low risk

Intruders are expected to have little knowledge of IAS and be restricted to a limited range of easily available tools.

4.1.2 Grade 2: Low to medium risk

Intruders are expected to have a limited knowledge of IAS and the use of a general range of tools and portable instruments.

EXAMPLE: a multi-meter.

4.1.3 Grade 3: Medium to high risk

Intruders are expected to be conversant with IAS and have a comprehensive range of tools and portable electronic equipment.

4.1.4 Grade 4: High risk

To be used when security takes precedence over all other factors. Intruders are expected to have the ability or resource to plan an intrusion in detail and have a full range of equipment, including means of substitution of vital components in the IAS.

5 Environmental classification

The environmental class of each system component should be determined by the environmental conditions in which the component is expected to operate.

EN 50131-1 defines four environmental classes as shown below:

- I) indoor but restricted to residential/office environment;

EXAMPLE: living rooms and offices.

- II) indoor in general;

EXAMPLE: sales floors, shops, restaurants, stairways, manufacturing and assembly areas and storage rooms.

- III) outdoor but sheltered from direct rain and sunshine, or indoors with extreme environmental conditions;

EXAMPLE: garages lofts, barns and loading bays.

- IV) outdoor in general

6 General

The IAS should be installed, operated (see Clause 12) and maintained in a manner consistent with the manufacturers recommendations for the equipment and the environmental conditions under which the IAS is expected to operate.

6.1 Other components

Components of other systems may be combined or integrated with the IAS providing the performance of the IAS components are not adversely influenced.

6.2 Safety

National or European requirements relating to safety may exist. Such requirements are not included in these application guidelines and reference should be made directly to the relevant National or European documents.

EXAMPLE: electrical safety.

6.3 Unwanted alarms

It is recommended that care should be taken by system designers, installation companies, alarm companies and users, to avoid unwanted alarms.

6.4 Responsibility

Responsibility for each individual stage in the process of supplying an IAS; design, installation, commissioning and hand-over should be clearly defined and agreed between the relevant parties.

6.5 Qualifications

Persons responsible for risk assessment and the design, installation, maintenance and repair of IAS should hold appropriate qualifications.

NOTE These qualifications required may vary from country to country.

6.6 Confidentiality

Information relating to the design, installation, operation and maintenance of the IAS should be treated as confidential.

6.7 Consultation

The design of a system should be determined in consultation with the client or specifier of the IAS (or his/her representative) and any other interested parties.

EXAMPLE: insurers or police.

When considered necessary, expert advice should be obtained.

The designer of the IAS should consider any requirements for third party approval of the whole IAS or a particular system component. Any such requirements should be identified at an early stage in the design of the IAS and the selection of system components.

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