



SLOVENSKI STANDARD

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Sistemi za odkrivanje in javljanje požara ter alarmiranje -14. del: Smernice za načrtovanje, projektiranje, vgradnjo, preverjanje, uporabo in vzdrževanje

Fire detection and fire alarm systems - Part 14: Guidelines for planning, design, installation, commissioning, use and maintenance

Brandmeldeanlagen - Teil 14: Leitfaden für Planung, Projektierung, Montage, Inbetriebsetzung, Betrieb und Instandhaltung

Systèmes de détection et d'alarme incendie - Partie 14: Guide d'application pour la planification, la conception, l'installation, la mise en service, l'exploitation et la maintenance

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Fire detection and fire alarm systems - Part 14: Guidelines for planning, design, installation, commissioning, use and maintenance

Systèmes de détection et d'alarme incendie - Partie 14:
Guide d'application pour la planification, la conception,
l'installation, la mise en service, l'exploitation et la
maintenance

Brandmeldeanlagen - Teil 14: Leitfaden für Planung,
Projektierung, Montage, Inbetriebsetzung, Betrieb und
Instandhaltung

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 72.

If this draft becomes a European Standard, CEN 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.

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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.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (prEN 54-14:2011) has been prepared by Technical Committee CEN/TC 72 “Fire Detection and Fire alarm systems”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede CEN/TS 54-14:2004.

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Introduction

Guidelines and standards for the planning, design, installation, commissioning, use and maintenance of a fire detection and fire alarm system are published by many different organisations within Europe.

This document is a framework and template to be used in the drafting, review and revision of any such national standards and guidelines. It is intended that the availability of a common structure and template for such guidelines and standards in Europe will assist in the gradual harmonisation of practice and standards of fire detection and fire alarm systems throughout Europe.

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1 Scope

This document provides a framework and template for the drafting, review and revision of national standards and guidelines for the application of automatic fire detection and fire alarm systems in and around buildings. The framework covers planning, design, installation, commissioning, use and maintenance of the systems.

<NOTE to national committees: When published as a national standard or guideline with the relevant national requirements included in those sections identified by highlighted <notes to national bodies>, the above paragraph shall be removed>.

The standard covers systems intended for the protection of life and/or the protection of property. The standard covers systems with at least one manual call point or one fire detector. The systems may be capable of providing signals to initiate, in the event of a fire, the operation of ancillary equipment (such as fixed fire extinguishing systems) and other precautions and actions (such as machinery shutdown), but the standard does not cover the ancillary services themselves or ancillary circuits to interface with them.

The standard does not cover systems combining fire alarm functions with other non-fire related functions.

The standard does not recommend whether or not an automatic fire detection and/or fire alarm system should be installed in any given premises.

It has been assumed in the drafting of this standard that it is used by appropriately competent persons. However, guidance is also given to other persons purchasing or using a fire detection or fire alarm system.

Smoke alarms according to EN 14604 are not fire detection and fire alarm systems in the sense of this standards

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2 Normative references

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The following referenced document is indispensable for the application 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 54, *Fire detection and fire alarm systems*, consists of the following parts:

- Part 1: Introduction
- Part 2: Control and indicating equipment
- Part 3: Fire alarm devices – Sounders
- Part 4: Power supply equipment
- Part 5: Heat detectors – Point detectors
- Part 7: Smoke detectors – Point detectors using scattered light, transmitted light or ionization
- Part 10: Flame detectors – Point detectors
- Part 11: Manual call points
- Part 12: Smoke detectors – Line detectors using an optical light beam
- Part 13: Compatibility assessment of system components
- Part 14: Guidelines for planning, design, installation, commissioning, use and maintenance

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- Part 16: Voice alarm control and indicating equipment
- Part 17: Short-circuit isolators
- Part 18: Input/output devices
- Part 20: Aspirating smoke detectors
- Part 21: Alarm transmission and fault warning routine equipment
- Part 22: Line-type heat detectors
- Part 23 Fire alarm devices – Visual alarms
- Part 24: Components of voice alarm systems – Loudspeakers
- Part 25: Components using radio links
- Part 26: Point fire detectors using carbon monoxide sensors
- Part 27: Duct smoke detectors
- Part 28: Non-resettable (digital) line type heat detectors
- Part 29: Multi-sensor detector – Point detector using a combination of smoke and heat sensors
- Part 30: Multi-sensor detector – Point detector using
- Part 31: Multi-sensor detector – Point detectors using a combination of smoke, carbon monoxide and optionally heat sensors

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 54-1:20xx and the following apply.

- 3.1 acceptance**
decision that the installed system meets the requirements of a previously agreed specification
- 3.2 alarm load**
maximum power (normally electrical) that might be required under the fire condition
- 3.3 ancillary equipment**
equipment which can initiate or be initiated by the fire detection and alarm system
- 3.4 approval**
agreement by a third party that the installed system satisfies the requirements of the third party
- 3.5 approval body**
body accepted by an authority having jurisdiction or other competent organisation as having the expertise necessary to assess the compliance of the installed system with this standard

3.6**authority having jurisdiction**

body having powers provided under local, regional, national or European legislation

3.7**beam detector**

more commonly used term for 'smoke detector - line detector using a transmitted light beam' (see EN 54-12)

3.8**circuit**

interconnected assembly of cables, components and elements, terminated at the control and indicating equipment in such a way that its only connection to other parts of the fire detection and alarm system is through the control and indicating equipment and controlled by the control and indicating equipment

NOTE 1 A circuit may have more than one link to the control and indicating equipment (as in a loop circuit, connected to the control and indicating equipment at both ends).

NOTE 2 If two or more cables are directly linked together inside the control and indicating equipment, without the possibility of control by the link, then they are part of the same circuit.

NOTE 3 The transmission path for radio linked system is part of a circuit

3.9**commissioning**

process by which it is verified that the installed system meets the defined requirements

3.10**commissioning engineer**

person who carries out the process of commissioning

3.11**competent person**

person who, in relation to the work undertaken, has the necessary knowledge, skill and experience to complete the work satisfactorily and without danger or injury to any person

3.12**component**

device which is defined as a component type I or component type II in EN 54-13

3.13**configuration**

programming the CIE to perform the functions intended by the designer, the relevant standards and the fire protection strategy

3.14**designer**

person or organisation taking responsibility for the work outlined in Clause 6

3.15**false (or unwanted) alarm**

fire alarm caused by reasons other than fire which may be sub-divided into sub-categories. For example:

- a) alarms, in which a system has responded, either as designed or as the technology may reasonably be expected to respond, to any of the following:
 - a fire-like phenomenon or environmental influence (e.g. smoke from a nearby bonfire, dust or insects, processes that produce smoke or flame, or environmental effects that can render certain types of detector unstable, such as rapid air flow);
 - accidental damage;

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- inappropriate human action (e.g. operation of a system for test or maintenance purposes without prior warning to building occupants and/or an alarm receiving centre);
- b) alarms, in which the false alarm has resulted from a fault in the system;
- c) alarms, in which a person operates a manual call point or causes a fire detector to initiate a fire signal, whilst knowing that there is no fire;
- d) alarms with good intent, in which a person operates a manual call point or otherwise initiates a fire signal in the belief that there is a fire, when no fire actually exists

NOTE 1 to national committees: additional categories may be added if required

NOTE 2 There are different words in EU countries for the phenomena described in a) to d). When translating this definition please look at the content and use appropriate words

3.16**fault**

failure within the system in such a way as to jeopardise the correct functioning of the system

3.17**fault signal**

signal intended to indicate the occurrence of a fault

3.18**fault warning**

fault signal perceptible to a person

3.19**fire**

pyrolysis or combustion needing investigation and/or corrective action in order to prevent danger to life or property

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3.20**fire alarm**

visual, audible or tactile indication of fire

3.21**fire alarm response strategy**

pre-planned procedures which are expected to be followed when a fire alarm occurs

3.22**fire attendance**

time between alarm and arrival of trained fire fighters

3.23**fire compartment**

compartment whose boundary components are required by regulations to have a defined fire resistance

3.24**fire signal**

signal intended to indicate the occurrence of a fire

3.25**hierarchical system**

networked system in which one control and indicating equipment is designated as the main control and indicating equipment, and in which the main control and indicating equipment is able to:

- a) receive signals from and/or transmit signals to subsidiary control and indicating equipment;

b) indicate the status of the subsidiary control and indicating equipment.

3.26

Initialisation

First power up of the fire alarm system – prior to configuration and commissioning but post installation

3.27

inspection

routine processes by which the system, its functioning and its indications are manually checked at pre-determined intervals

3.28

installation

work of fixing and interconnecting the components and elements of a system. Installation may be carried out by one or more parties (also see 8.2)

3.29

installed system

system after installation and commissioning has been completed

3.30

installer

person or organisation having responsibility for all or part of the process of installation

3.31

integrated system

system in which the fire detection and alarm functions are integrated with other functions that do not deal with fire fighting, fire protection or evacuation in case of fire

3.32

licensing body

the central, local or municipal government organisation responsible for licensing the use or occupation of a building

3.33

maintenance

work of inspection, servicing and repair necessary in order to maintain the efficient operation of the installed system

3.34

mimic diagram

diagrammatic representation of the building, carrying active indications which are directly related to the building layout

3.35

national document

document, published by a national standards body, giving national recommendations or requirements for installed systems, but not having general application within all CEN countries

3.36

networked system

fire detection and fire alarm system in which several control and indicating equipment are interconnected and able to exchange information

3.37

pre-warning

warning given when the signal from a sensor exceeds the normal level but has not yet reached the fire level

prEN 54-14:2011 (E)**3.38****purchaser**

person or organisation taking primary responsibility for payment for the installed system

3.39**qualified**

satisfying any relevant national, regional or local standards for competence

3.40**quiescent condition**

condition of the installed system when it is supplied by power from its main power source, and has no indicated fire alarms, fault warnings or disablements

3.41**repair**

non-routine work necessary to restore the efficient operation of the installed system

3.42**repeat indicating panel**

panel which replicates all or some of the indications of the control and indicating equipment,

receiving unit: Component, which receives RF-energy from RF-communication

3.43**search distance**

distance that a person has to travel within the affected zone in order to visually determine the position of the fire

3.44**servicing**

routine processes of work on the system (including cleaning, re-alignment, adjustment and replacement) carried out at pre-determined intervals

3.45**standby load**

power taken by the system under failure of the main power source but otherwise quiescent condition

3.46**supplier**

organisation from which all or part of the hardware and/or software for the installed system is purchased

NOTE

If all the hardware and/or software for an installed system is purchased from a single organisation, then that organisation is called the system supplier.

3.47**third party**

body or organisation other than the installer, supplier or customer

3.48**user**

person or organisation having control of the building (or part of the building) in which the fire detection and alarm system is installed

3.49**verification**

process by which the installer or other contractor satisfies the customer that the installed system meets the defined requirements

3.50**zone**

geographical sub-division of the protected premises in which a function may be carried out separately from any other sub-division

NOTE 1 The function may, for instance, be:

- the indication of the occurrence of a fire (detection zone);
- the giving of a fire alarm (alarm zone).

NOTE 2 Zoning for different functions need not be identical.

3.51**zone card**

portable zone map, covering one or more individual zones

3.52**zone map**

diagram showing the geographic boundaries of zones and, if necessary access routes to zones

4 General**4.1 Guideline usage**

These guidelines provide recommendations for planning, design, installation, commissioning, use and maintenance of fire detection and fire alarm systems.

In this form they are not mandatory, but are believed to provide a suitable basis for the provision and usage of good systems. Since the recommendations are not mandatory, they specify what "should" be done, rather than giving requirements on what "shall" be done.

Note: An authority having power under local or national legislation such as the fire brigade or building control or insurer, can require compliance with the recommendations.

The competence of the persons or organisations carrying out any kind of work referred to in these guidelines should be appropriately qualified.

4.2 Guideline format

It is appreciated that the guidelines cannot cover every possible case that might arise. For this reason, departure from the recommendations are possible, provided that they have been discussed and agreed between all interested parties (see 5.2).

These guidelines have been drawn up as if the provision and use of an installed system will follow the pattern shown in Figure 1.

It is assumed that the first step in the design process is to assess the needs of the building for fire detection and fire alarm (see Clause 5). This may include an assessment of:

- a) whether part or all of the building is to be protected;
- b) the type of system to be installed; (e.g. manual or automatic, property or life protection, alarm notification etc)
- c) the interaction of the system with other fire protection measures.