



# SLOVENSKI STANDARD

## SIST EN 54-1:2011

01-oktober-2011

Nadomešča:  
SIST EN 54-1:1996

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### Sistemi za odkrivanje in javljanje požara - 1. del: Uvod

Fire detection and fire alarm systems - Part 1: Introduction

Brandmeldeanlagen - Teil 1: Einleitung

Systemes de detection et d'alarme incendie - Partie 1: Introduction

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**Ta slovenski standard je istoveten z: EN 54-1:2011**

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#### **ICS:**

13.220.20	Požarna zaščita	Fire protection
13.320	Alarmni in opozorilni sistemi	Alarm and warning systems

**SIST EN 54-1:2011**

**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 54-1**

March 2011

ICS 13.220.20

Supersedes EN 54-1:1996

English Version

**Fire detection and fire alarm systems - Part 1: Introduction**

Systèmes de détection et d'alarme incendie - Partie 1:  
Introduction

Brandmeldeanlagen - Teil 1: Einleitung

This European Standard was approved by CEN on 19 February 2011.

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. 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 CEN 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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Foreword

This document (EN 54-1:2011) has been prepared by Technical Committee CEN/TC 72 “Fire detection and fire alarm systems”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2011, and conflicting national standards shall be withdrawn at the latest by September 2011.

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

This document supersedes EN 54-1:1996.

This edition incorporates the following main changes made with respect to the previous edition of EN 54-1:1996 as follows:

- a) extension to cover new parts of the EN 54 series,
- b) revised approach of Figure 1: introduction of functionalities.

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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 (CEN/TS 54-14)*
- *Part 16: Voice alarm control and indicating equipment*
- *Part 17: Short-circuit isolators*
- *Part 18: Input/output devices*

**EN 54-1:2011 (E)**

- *Part 20: Aspirating smoke detectors*
- *Part 21: Alarm transmission and fault warning routine equipment*
- *Part 22: Resettable line type heat detectors*
- *Part 23 Fire alarm devices — Visual alarm devices*
- *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 line type heat detectors*
- *Part 29: Multi-sensor fire detectors — Point detectors using a combination of smoke and heat sensors*
- *Part 30: Multi-sensor fire detectors — Point detectors using a combination of carbon monoxide and heat sensors*
- *Part 31: Multi-sensor fire detectors — Point detectors using a combination of smoke, carbon monoxide and optionally heat sensors*
- *Part 32: Guidelines for the planning, design, installation, commissioning, use and maintenance of voice alarm systems*

NOTE This list includes standards that are in preparation and other standards may be added. For current status of published standards refer to [www.cen.eu](http://www.cen.eu).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## Introduction

This European Standard gives the necessary information for the intended use of the series of EN 54 standards. The EN 54 series applies to fire detection and fire alarm systems in and around buildings composed of several components that communicate for the purpose of detecting fire at the earliest practicable moment, and to provide:

- local and/or remote fire alarms to organizations having authority to take care of buildings and their environment;
- signals to initiate, in the event of a fire, the operation of other fire protection and equipment/systems.

The EN 54 series may be used for other applications e.g. mines and ships, but one should consider the specific nature of each application before use. Additional performance and environmental tests may be necessary. This does not preclude the manufacture or use of systems having special characteristics suitable for the protection of specific risks against specific hazards.

As this revision of the standard includes terms and definitions collated from specific parts of EN 54, there may now be some duplication of terms and definitions in other parts. This situation will be corrected in future revisions of the different parts of EN 54 so that definitions are defined only once and are applied consistently throughout the series.

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**EN 54-1:2011 (E)****1 Scope**

This part of EN 54 defines the terms and definitions that are used throughout EN 54. It gives the principles on which each part of the standard has been based and describes the functions carried out by the components of a fire detection and fire alarm system.

This European Standard applies to fire detection and fire alarm systems in and around buildings.

This European Standard does not apply to smoke alarm devices which are covered by EN 14604.

**2 General****2.1 Standardization series**

EN 54 specifies:

- requirements, test methods and performance criteria against which the effectiveness and reliability of the component parts of fire detection and fire alarm systems can be assessed;
- requirements and test methods against which the ability of components to be combined into an effective system can be assessed;
- guidelines for the incorporation and use of fire detection and fire alarm systems into buildings or other construction works.

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**2.2 General principles**

The function of a fire detection and fire alarm system is:

- to detect fire at the earliest practicable moment, and to give signals and indications so that appropriate action can be taken;
- to give audible and/or visible signals to the occupants of the building who may be at risk from a fire.

The functions of a fire detection and fire alarm system may be grouped to form subsystems such as a fire detection subsystem and a voice alarm subsystem.

As the system is required to function satisfactorily, not only under fire conditions, but also when exposed to conditions likely to be met in practice, the tests specified in the EN 54 series are intended to assess the performance of the components and the system under such conditions.

The performance of components is assessed from the results obtained in the specified tests and from their ability to perform the required functions. This standard is not intended to place restrictions on the design or construction of components other than those necessary for the performance of desired functions.

The compliance of a component with the relevant part of EN 54 does not ensure that this component will necessarily function correctly when connected with another component also conforming to the relevant part of EN 54 (e.g. control and indicating equipment with a fire detector), unless both components have been assessed together as conforming to the requirements for a system.



### 3 Terms, definitions and abbreviations

#### 3.1 Terms and definitions

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

NOTE 1 The list of components of fire detection and fire alarm systems is not intended to be exclusive.

NOTE 2 Definitions for other components may be added in later revisions of this European Standard or by amendment when such components are produced.

NOTE 3 Additional definitions specific to individual parts are included in those parts.

##### 3.1.1

##### **fire alarm and fault warning transmission system**

system used for routing fire alarm and fault warning signals from fire detection and alarm systems in buildings to fire alarm and/or fault warning receiving centres

NOTE Alarm and fault transmission system comprises fire alarm routing equipment, fault warning routing equipment, receiving equipment and a communication network.

##### 3.1.2

##### **ancillary equipment**

equipment which support fire related functions not currently defined in EN 54

##### 3.1.3

##### **aspirating smoke detector**

smoke detector, in which air and aerosols are drawn through a sampling device and carried to one or more smoke sensing elements by an integral aspirator (e.g. fan or pump)

NOTE Each smoke-sensing element may contain more than one sensor exposed to the same smoke sample.

##### 3.1.4

##### **building management system**

facilities used to monitor, control and manage equipment installed in a building for comfort, safety and/or security purposes

##### 3.1.5

##### **combustion gas detector**

fire detector sensitive to gaseous products of combustion and/or thermal decomposition

EXAMPLE Carbon monoxide fire detector.

##### 3.1.6

##### **commissioning**

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

##### 3.1.7

##### **compatibility**

ability of a component of the system to operate with another component of the same system

##### 3.1.8

##### **component**

device contained in one housing performing at least one, or part, of a function of a fire detection and fire alarm system

EXAMPLE Fire detectors, alarm devices and control and indicating equipment are components of a fire detection and fire alarm system.

NOTE Where a function is distributed in separate housings each housing is considered as a separate component.

**EN 54-1:2011 (E)****3.1.9****CIE (control and indicating equipment)**

component of a fire detection and fire alarm system through which other components may be supplied with power and which:

- a) is used:
    - 1) to receive the signals from the connected detectors and/or manual call points;
    - 2) to determine whether these signals correspond to a fire alarm condition;
    - 3) to indicate any such fire alarm condition audibly and visually;
    - 4) to indicate the location of the danger;
  - b) is used to monitor correct functioning of the system and give audible and visible warning of any faults (e.g. short circuit, line breakage, or fault in the power supply); and, if necessary is able to pass on the fault warning through fault warning routing equipment to a fault warning receiving centre;
  - c) if necessary, is able to pass on the fire alarm signal; for example:
    - to audible or visible fire alarm devices or to a voice alarm system;
    - to the fire alarm routing function to a fire alarm receiving centre;
    - to the control function for fire protection equipment or systems;
    - to fire brigade panel;
    - to other systems or equipment not covered by EN 54
- EXAMPLE Visualization equipment, such as a mimic panel.

**3.1.10****control for fire protection equipment or system**

device used to actuate fire protection equipment or fire protection systems after receiving a signal from the control and indicating equipment

**3.1.11****detachable detector**

detector which is designed for removal of the head from its base

NOTE The use of detachable detectors can assist during maintenance without disconnecting the fixed wiring.

**3.1.12****duct smoke detector**

smoke detector that monitors the air in a duct

**3.1.13****fault warning receiving centre**

centre from which the necessary corrective measures can be initiated on receipt of fault signals

**3.1.14****fault warning routing equipment**

equipment which routes a fault warning signal to a fault warning receiving centre

**3.1.15****fire alarm device**

component of a fire alarm system, not incorporated in the control and indicating equipment, which is used to give a warning of fire

EXAMPLE Fire alarm sounders, visual alarms, voice alarm loudspeakers, tactile devices.

**3.1.16****fire alarm receiving centre**

centre from which the necessary fire protection or fire-fighting measures can be initiated on receipt of a fire alarm signal

**3.1.17****fire alarm routing equipment**

equipment which routes an alarm signal from a control and indicating equipment to a fire alarm receiving station

**3.1.18****fire alarm sounder**

fire alarm device intended to signal an audible warning of fire between the fire detection and fire alarm system and the occupants of the building

**3.1.19****fire brigade panel**

device connected to the CIE specifically designed for use by the fire brigade

**3.1.20****fire detection and fire alarm system  
FDAS**

group of components including the control and indicating equipment which when arranged in (a) specific configuration(s) is capable of detecting and indicating a fire, and giving signals for appropriate action

**3.1.21****fire detector**

component of a fire detection and fire alarm system which contains at least one sensor which constantly or at frequent intervals monitors at least one suitable physical and/or chemical phenomenon associated with fire, and that provides at least one corresponding signal to the control and indicating equipment

NOTE The decision to give the alarm of fire or to operate fire protection equipment or system that may be made at the detector or other component of the system, for example at the control and indicating equipment.

EXAMPLE These may include:

- flame detectors, smoke detectors, heat detectors, combustion gas detectors;
- point detectors, line type detectors, multipoint detectors, aspirating detectors;
- resettable detectors, non-resettable detectors;
- detachable detectors, non detachable detectors.

**3.1.22****fire protection equipment**

equipment to limit the effect of fire

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