SLOVENSKI STANDARD
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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

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

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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 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 54-1:2020) 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 EN 54-1:2011.

EN 54, *Fire detection and fire alarm systems,* is currently composed with 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 heat detectors*

— *Part 6: Heat sensitive detectors — Rate of rise point detectors without a static element*

— *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*

— *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 https://www.cen.eu.

Introduction

General

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

— to give audible and/or visible signals to the occupants of the building who may be at risk from a fire;

— to provide remote fire alarms to organizations having authority to take care of buildings and their environment;

— to give signals to initiate, in the event of a fire, the operation of other fire protection and equipment/systems.

The EN 54-series specifies:

— product characteristics, 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 and declared;

— requirements for compatibility and connectability of components when combined into a system;

— guidelines for application of fire detection and fire alarm systems in buildings and civil engineering works.

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.

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. This performance 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.

Open Descriptions to express product performance

Many of the product standards in the EN 54 series fall under the Construction Product Regulation (305/2011/EU – CPR) and, as such, they are prepared for citation in the Official Journal of the European Union (OJEU) as Harmonized standards (hENs). This regulation places constraints on how the EN 54

products standards are prepared and an approach using “open descriptions” is being phased in to realize the “common technical language” expected by the CPR and thus facilitate ongoing citation in the OJEU.

In the past the EN 54 series specified the minimum performance using pass/fail criteria. In the CPR the pass/fail criteria is not allowed. This contradiction can be overcome by using *descriptions* of performance, which are allowed by the CPR, particullarly if the descriptions are *open (*allows open trade for products with different performances*).* This “open descriptions” approach is being phased into the EN 54 series and introduces standard descriptors “X” and “0” to express, respectively, when an optional characteristic is not provided (X) and when the performance of a characteristic is not within defined criteria (0). Other descriptors (e.g. “1”, “2”, “A1”, “A2”) express when the performance of a characteristic is within defined criteria. Together, these descriptors establish a “common technical language” which can be used by member states to specify the requirements for FDAS components.

This “open descriptions” approach is being phased into the EN 54 series. It is easy to recognize those parts which have adopted the approach because the descriptors and corresponding criteria for each product characteristic are expressed in tabular form.

1 Scope

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

This document applies to fire detection and fire alarm systems for buildings and civil engineering works.

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

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 16763:2017, *Services for fire safety systems and security systems*

3 Terms and definitions

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

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
access level
one of several states of equipment in which selected

— controls can be operated,

— manual operations can be carried out,

— indications are visible, and/or

— information can be obtained

3.2
addressable device
device that can be individually identified at the CIE

3.3
aerosol tunnel
<smoke tunnel>
test arrangement, producing a well-controlled increase of an artificial aerosol for the purpose of a reproducible assessment of the response behaviour of a smoke detector

3.4
ancillary equipment
equipment which supports fire related functions not currently defined in EN 54

3.5
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 1 to entry: Each smoke-sensing element may contain more than one sensor exposed to the same smoke sample.

3.6
building management system
facilities used to monitor, control and manage equipment installed in a building for comfort, safety and/or security purposes

3.7
combustion gas detector
fire detector sensitive to gaseous products of combustion and/or thermal decomposition

EXAMPLE Carbon monoxide fire detector

3.8
commissioning
activating and testing of the system according to the design

[Source: EN 16763:2017, 2.12]

3.9
compatibility
ability of a component of the system to operate with another component of the same system

3.10
competent person
individual who, in relation to the work undertaken, has the necessary knowledge, skill, tools and experience to complete the defined task satisfactorily and safely

3.11
component
device contained in one housing, that performs a function, several funtions 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 1 to entry: Where a function is distributed in separate housings each housing is considered as a separate component.

3.12
control and indicating equipment
CIE
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:

i) to audible or visible fire alarm devices or to a voice alarm system;

ii) to the fire alarm routing function to a fire alarm receiving centre;

iii) to the control function for fire protection equipment or systems;

iv) to fire brigade panel;

v) to other systems or equipment not covered by EN 54.

3.13
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

3.14
detachable component
component which comprises two or more parts where parts may be removed from fixed part connected to the transmission path without tools

3.15
detachable detector
detector which is designed for removal of the head from its base

Note 1 to entry: The use of detachable detectors can assist during maintenance without disconnecting the fixed wiring.

3.16
distributed CIE
a single CIE which is contained in cabinets, which are physically separated from each other

Note 1 to entry: The requirements are given in EN 54-2.

Note 2 to entry: See Annex B for examples.

3.17
distributed VACIE
a single VACIE which is contained in cabinets, which are physically separated from each other

Note 1 to entry: The requirements are given in EN 54-16.

Note 2 to entry: See Annex B for examples.