

Fire detection and fire alarm systems —

Part 13: Compatibility assessment of system components

The European Standard EN 54-13:2005 has the status of a British Standard

ICS 13.220.20

National foreword

This British Standard is the official English language version of EN 54-13:2005.

The UK participation in its preparation was entrusted by Technical Committee FSH/12, Fire Detection and Alarm Systems, to Subcommittee FSH/12/1, Installation and Servicing, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 23 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 24 June 2005

© BSI 24 June 2005

ISBN 0 580 46213 7

Amendments issued since publication

Amd. No.	Date	Comments

English version

Fire detection and fire alarm systems - Part 13: Compatibility assessment of system components

Systèmes de détection et d'alarme incendie - Partie 13 :
Évaluation de la compatibilité des composants d'un
système

Brandmeldeanlagen - Teil 13: Bewertung der Kompatibilität
von Systembestandteilen

This European Standard was approved by CEN on 28 February 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents		Page
Foreword.....		3
Introduction		4
1	Scope.....	5
2	Normative references	5
3	Terms, definitions and abbreviations	5
3.1	Terms and definitions	5
4	Requirements.....	7
4.1	Compliance	7
4.2	Basic system requirements	7
4.3	Networked systems	7
4.4	Components.....	8
4.5	Transmission path(s)	9
4.6	Input and output devices linked to a fire protection system.....	9
4.7	Documentation	10
5	Assessment methods and tests	11
5.1	General requirements.....	11
5.2	General test requirements	12
5.3	Functional test for compatibility	12
5.4	Functional test for connectability	15
5.5	Electromagnetic compatibility tests.....	16
Annex A (normative) Functions of a FDAS		17
Annex B (informative) Classification of functions of the FDAS.....		18
Annex C (informative) Example methodology for theoretical analysis.....		20

Foreword

This document (EN 54-13:2005) 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 November 2005, and conflicting national standards shall be withdrawn at the latest by May 2007.

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

This document has been prepared in co-operation with the CEA (Comité Européen des Assurances) and with EURALARM (Association of European Manufacturers of Fire and Intruder Alarm Systems).

EN 54 is published in a series of parts. Information on the relationship between this document and other standards of the EN 54 series is given in Annex A of EN 54-1:1996.

EN 54-1 provides additional information about the components performing those functions that are listed in Annex A of this document.

Introduction

The fire detection function is to detect a fire at the earliest practicable moment, and to give signals and indications so that appropriate action can be taken.

The fire alarm function is to give, at least, audible and/or visible signals to the occupants of a building who may be at risk from fire.

A fire detection and fire alarm system may combine the functions of detection and alarm in a single system, and typically consists of a number of inter-linked components including automatic fire detectors, manual call points and alarm sounders. These components are connected to control and indicating equipment by means of one or more transmission paths. All system components, including the control and indicating equipment, are also directly or indirectly connected to a power supply.

A fire detection and fire alarm system may also be linked to remote fault and fire alarm monitoring stations, and to fire protection and/or building management systems. However these systems are not considered as part of the fire detection and fire alarm system.

It is necessary that all the components constituting the fire detection and fire alarm system are compatible or connectable, and that requirements relating to the performance of the overall system are fulfilled.

Differentiation is made between components classified as components type 1 and other components classified as components type 2.

System requirements are also included for those fire detection and fire alarm systems that are linked to fire protection and/or other systems (e.g. building management systems).

1 Scope

This document specifies the requirements for compatibility and connectability assessment of system components that either comply with the requirements of EN 54 or with a manufacturer's specification where there is no EN 54 standard. This document only includes system requirements when these are necessary for compatibility assessment.

This document also specifies requirements for the integrity of the fire detection and fire alarm system when connected to other systems.

This document does not specify the manner in which the system is designed, installed and used in any particular application.

This document recognizes that it is not practical to assess the compatibility or connectability of components in all possible configurations. Methods of assessment are specified to reach an acceptable degree of confidence within pre-determined operational and environmental conditions.

This document specifies requirements related to compatibility and connectability assessment methods and tests for the system components.

This document is applicable to systems where the components are connected to control and indicating equipment and where the components are interconnected by electrical wires.

For fire detection and fire alarm systems that use other means of interconnection (for example optical fibre or radio frequency links), this document may be used as guidance.

NOTE Other European Standards are expected to cover the requirements of the other systems to which the fire detection and fire alarm system may be connected.

2 Normative references

The following referenced documents are 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 54-1:1996, *Fire detection and fire alarm systems — Part 1: Introduction*

EN 54-2:1997, *Fire detection and fire alarm systems — Part 2: Control and indicating equipment*

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

EN 60068-1, *Environmental testing — Part 1: General and guidance (IEC 60068-1:1988 + Corrigendum 1998 + A1:1992)*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 54-1:1996 and the following apply.

3.1.1

compatibility

ability of a component type 1 to operate with control and indicating equipment:

- within the limits specified for each component;
- within the specified limits given by the relevant parts of EN 54 if available, or given by the manufacturer if not available;
- within specified configurations of systems

3.1.2

component type 1

device performing a function for the protection of life and/or property that is required by European or national guidelines or regulations

3.1.3

component type 2

device performing a function for the protection of life and/or property that is not required by European or national guidelines or regulations

EXAMPLE A printer used for listing fire events.

3.1.4

configuration

topological arrangement of components connected through transmission paths to control and indicating equipment

3.1.5

connectability

ability of component type 2 to operate without jeopardizing the performance of the fire detection and fire alarm system

3.1.6

control and indicating equipment

CIE

component of a fire detection and alarm system through which other components may be supplied with power (see EN 54-1)

3.1.7

fire detection and fire alarm system

FDAS

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

3.1.8

fire protection system

FPS

group of devices that in combination are capable of automatically actuating measures to limit the effect of fire

EXAMPLE Compartmentation systems, smoke control systems and fixed firefighting systems.

3.1.9

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:

- receive signals from and/or transmit signals to the control and indicating equipment of a subsystem;
- indicate the status of the control and indicating equipment of a subsystem