Nederlandse norm

NEN-EN 54-3 (en)

Automatische brandmeldinstallaties - Deel 3: Brandalarmeringsapparatuur - Akoestische signaalgevers

Fire detection and fire alarm systems - Part 3: Fire alarm devices - Sounders

Vervangt NEN-EN 54-3:1995 Ontw.

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Als Nederlandse norm is aanvaard:
- EN 54-3:2001,IDT

Normcommissie 353 086 "Brandmeldsystemen"

NEN

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Nederlands voorwoord

Voor de in deze norm vermelde normatieve verwijzingen bestaan in Nederland de volgende equivalenten:

vermelde norm	Nederlandse norm	titel
EN 54-1:1996	NEN-EN 54-1:1996	Automatische brandmeldinstallaties - Deel 1: Inleiding (en)
EN 50130-4:1995	NEN-EN 50130-4:1996	Alarmsystemen - Deel 4: Elektromagnetische compatibiliteit - Produktgroepnorm: Immuniteitseisen voor onderdelen van brand-, inbraak- en sociale alarmsystemen (en)
EN 60068-1:1994	NEN 10068-1:1995	Klimatologische en mechanische beproevingsmethoden voor elektrotechnische produkten - Deel 1: Algemene gegevens en leidraad (en,fr)
EN 60068-2-1:1993	NEN 10068-2-1:1994	Klimatologische en mechanische beproevingen van elektrotechnische produkten - Deel 2: Beproevingsmethoden - Sectie 1: Proef A: Koude (en,fr)
EN 60068-2-2:1993	-	-
HD 323.2.3 S2:1987	NEN 10068-2-3:1985	Klimatologische en mechanische beproevingsmethoden voor elektrotechnische produkten - Deel 2-3: Bestandheid tegen vochtige warmte (en,fr)
EN 60068-2-6:1995	NEN 10068-2-6:1995	Klimatologische en mechanische beproevingsmethoden voor elektrotechnische produkten - Deel 2: Beproevingen - Sectie 6: Proef Fc en leidraad: Trillingen (sinusvorming) (en,fr)
EN 60068-2-27:1993	NEN 10068-2-27:1994	Klimatologische en mechanische beproevingsmethoden voor elektrotechnische produkten - Deel 2: Beproevingsmethoden - Sectie 27: Proef Ea met leidraad: Schokken (en,fr)
IEC 60068-2-30:1980	NEN-EN-IEC 60068-2-30:1999	Klimatologische en mechanische beproevingsmethoden voor elektrotechnische producten - Deel 2-30: Beproevingen - Proef Db en leidraad: Cyclische vochtige-warmteproef (12 + 12 uur cyclus) (en,fr)
IEC 60068-2-42:1982	NEN 10068-2-42:1983	Klimatologische en mechanische beproevingsmethoden voor elektrotechnisch materieel - Deel 2-42: Zwaveldioxideproef voor contacten en verbindingen (en,fr)
HD 323.2.56 S1:1990	NEN 10068-2-56:1989	Klimatologische en mechanische beproevingsmethoden voor elektrotechnische produkten - Deel 2-56: Bestandheid tegen constant vochtige warmte, voornamelijk voor apparaten (en,fr)
IEC 60068-2-63:1997	-	-
EN 60529:1991	NEN 10529:1992	Beschermingsgraden van omhulsels van elektrisch materieel (IP-codering) (en,fr)
IEC 60651:1979	NEN 10651:1994	Geluidniveaumeters (en,fr)
ISO 1210:1992	-	-
ISO 10351:1992	-	-

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 54-3

April 2001

ICS 13.220.20

English version

Fire detection and fire alarm systems - Part 3: Fire alarm devices - Sounders

Systèmes de détection et d'alarme incendie - Partie 3: Dispositifs sonores d'alarme feu

Brandmeldeanlagen - Teil 3: Akustische Alarmierungseinrichtungen

This European Standard was approved by CEN on 17 December 1999.

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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 Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Ref. No. EN 54-3:2001 E

Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 72 "Fire detection and fire alarm systems", the secretariat of which is held by BSI.

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

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 October 2001, and conflicting national standards shall be withdrawn at the latest by October 2003. For products which have complied with the relevant national standard before the date of withdrawal (dow), as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until October 2006.

This standard 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).

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The purpose of a fire alarm sounder is to warn person(s) within, or in the vicinity of, a building of the occurrence of a fire emergency situation in order to enable such person(s) to take appropriate measures.

This standard recognizes that the exact nature of the sound requirement, i.e. its frequency range, temporal pattern and output level will vary according to the nature of the installation, the type of risk present and appropriate measures to be taken, the type of signals used for other non-fire emergency alarms (see, for example, EN 457) and national differences in custom and practice. The resulting standard specifies, therefore, a common method for the testing of the operational performance of sounders against the specification declared by the manufacturer rather than imposing common requirements.

Attention is drawn to ISO 8201 : 1987 Acoustics - Audible emergency evacuation signal, the international standard which specifies the temporal pattern and the required sound pressure level of an audible emergency evacuation signal.

This standard gives common requirements for the construction and robustness of sounders as well as for their performance under climatic, mechanical and electrical interference conditions which are likely to occur in the service environment. The sounders have been classified in either an indoor or an outdoor application environment category.

1 Scope

This European Standard specifies the requirements, test methods and performance criteria for fire alarm sounders in a fixed installation intended to signal an audible warning of fire between a fire detection and fire alarm system and the occupants of a building. It is intended to cover only those devices which derive their operating power by means of a physical electrical connection to an external source such as a fire alarm system.

This standard specifies fire alarm sounders for two types of application environment, type A for indoor use and type B for outdoor use.

This standard is not intended to cover:

a) loudspeaker type devices primarily intended for emitting emergency voice messages;

b) supervisory sounders, for example, within the control and indicating equipment.

2 Normative references

This European Standard 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 European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

Publication	Title
EN 54-1:1996	Fire detection and fire alarm systems - Part 1: Introduction
EN 50130-4:1995	Alarm systems - Part 4: Electromagnetic compatibility - Product family standard : Immunity requirements for components of fire, intruder and social alarm systems
EN 60068-1:1994	Environmental testing – Part 1: General and guidance (IEC 60068-1:1988 + Corrigendum 1988 + A1:1992)
EN 60068-2-1:1993	Environmental testing – Part 2: Tests, tests A: cold (IEC 60068-2-1:1990)
EN 60068-2-2:1993	Basic environmental testing procedures – Part 2: Tests, tests B: dry heat (IEC 60068-2-2:1974 + IEC 68-2-2 A:1976)
HD 323.2.3 S2:1987	Basic environmental testing procedures – Part 2: Tests, tests Ca: damp heat, steady state
EN 60068-2-6:1995	Environmental testing – Part 2: Tests – Tests Fc : Vibration (sinusoidal) (IEC 60068-2-6:1995 + Corrigendum 1995)
EN 60068-2-27:1993	Basic environmental testing procedures – Part 2: Tests – Test Ea and guidance: Shock (IEC 60068-2-27:1987)
IEC 60068-2-30:1980	Basic environmental testing procedures – Part 2: Tests – Tets Db and guidance: Damp heat, cyclic (12 + 12 – hour cycle)
IEC 60068-2-42:1982	Basic environmental testing procedures – Part 2: Tests – Test Kc: Sulphur dioxide test for contacts and connections
HD 323.2.56 S1:1990	Basic environmental testing procedures – Part 2: Tests, test Cb: damp heat, steady state, primarily for equipment
IEC 68-2-63:1997	Environmental testing – Part 2: Test methods – Test Eg: Impact, spring hammer
EN 60529:1991	Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)
IEC 60651:1979	Sound level meters
ISO 1210:1992	Plastics – Determination of the burning behaviour of horizontal and vertical specimens in contact with a small-flame ignition source
ISO 10351:1992	Plastics – Determination of the combustibility of specimens using a 125 mm flame source

3 Terms and definitions

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

3.1 mode (of operation): One of a possible number of pre-defined sound outputs of the audible alarm device which can be selected by means specified by the manufacturer.

3.2 A-weighted sound level: Sound pressure, expressed in dB, which is 20 times the logarithm to base ten of the ratio of the A-weighted sound pressure to the reference pressure of 20 mPa (20 mN/m2) - A-weighting characteristics are given in IEC 60651:1979.

3.3 type A device: Audible fire alarm device - sounder, designed for indoor application.

3.4 type B device: Audible fire alarm device - sounder, designed for outdoor application.

3.5 supervisory sounder: Audible device, usually mounted within a piece of equipment (e.g. control and indicating equipment), used for drawing attention, locally, to a change in status or the presence of an abnormal condition indicated by that equipment.

3.6 fire alarm sounder: Sound generating device intended to signal an audible warning of fire between a fire detection and fire alarm system and the occupants of a building, without the use of a voice signal.

4 Requirements

4.1 Compliance

In order to comply with this standard, fire alarm sounders shall meet the requirements of this clause which shall be verified by visual inspection or engineering assessment, shall be tested as described in clause 5 and shall meet the requirements of the tests.

4.2 Sound level

The standard requires that the manufacturer declare sound levels in the data required under 4.6.2. The manufacturer may declare different sound levels for operation under different conditions, for example, when operating on different voltage ranges or with different sound patterns. If this is the case the sound level of each specimen shall be measured under each mode of operation (see 5.3).

When tested in accordance with 5.3. the fire alarm sounder shall produce A-weighted sound levels of at least 65 dB in one direction and not exceeding 120 dB in any direction.

4.3 Frequency and sound pattern

This standard covers sounders which produce different frequencies and sound patterns and, therefore, does not specify a minimum and maximum frequency or a specific sound pattern.

> NOTE The sound patterns and frequencies required may vary in different countries. Reference needs to be made to local regulations.

However, the manufacturer shall declare the main sound frequency(ies), frequency range(s) and sound pattern(s) in the data required under 4.6.2.

4.4 Durability

The sounder shall be rated for at least 100 hours operation. No limitation by the manufacturer on duty factor or maximum on-time shall prevent the device from operating the 1 h 'on' 1 h 'off' cycle required by the test procedure described in 5.4.

> NOTE This requirement does not apply to the capacity of batteries which may be used within sounders as a means of local storage of operating power. The capacity and charging requirements of such batteries needs to meet the requirement of the system.

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