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Australian STANDARD

# Fire detection and alarm systems

# Part 24: Sound system loudspeakers



STANDARDS Australia

This Australian Standard® was prepared by Committee FP-002, Fire Detection, Warning, Control and Intercom Systems. It was approved on behalf of the Council of Standards Australia on 5 January 2015.
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The following are represented on Committee FP-002:

- Australasian Fire and Emergency Service Authorities Council
- Australian Building Codes Board
- Australian Chamber of Commerce and Industry
- Australian Industry Group
- Australian Institute of Building Surveyors
- CSIRO
- Deafness Forum of Australia
- Department of Human Services, Vic.
- Engineers Australia
- Fire Protection Association Australia
- National Electrical and Communications Association
- National Fire Industry Association
- Property Council of Australia
- Society of Fire Safety

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard®

# Fire detection and alarm systems

# Part 24: Sound-system loudspeakers

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# PREFACE

This Standard was prepared by the Standards Australia Committee FP-002, Fire Detection, Warning, Control and Intercom Systems.

The objective of this Standard is to provide the requirements and methods of test for sound-system loudspeakers in fire detection and fire alarm systems and emergency warning control and indicating equipment in and around buildings.

This Standard is identical with, and has been reproduced from ISO 7240-24:2010, *Fire detection and alarm systems,* Part 24: *Sound-system loudspeakers*, including Amendment 1:2013, which is attached at the back.

As this Standard is reproduced from an International Standard, the following applies:

(a) In the source text 'this part of ISO 7240' should read 'this Australian Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

| *Reference to International Standard* | | *Australian Standard* | |
|---|---|---|---|
| IEC | | AS | |
| 60068 | Environmental testing | 60068 | Environmental testing |
| 60068-1 | Part 1: General and guidance | 60068.1 | Part 1: General and guidance |
| 60068-2-1 | Part 2-1: Tests—Test A: Cold | 60068.2.1 | Part 2.1: Tests—Test A: Cold |
| 60068-2-2 | Part 2-2: Tests—Test B: Dry heat | 60068.2.2 | Part 2.2: Tests—Test B: Dry heat |
| 60068-2-6 | Part 2-6: Tests—Test Fc: Vibration (sinusoidal) | 60068.2.6 | Part 2.6: Tests—Test Fc: Vibration (sinusoidal) |
| 60068-2-27 | Part 2-27: Tests—Test Ea and guidance: Shock | 60068.2.27 | Part 2.27: Tests—Test Ea and guidance: Shock |
| 60068-2-30 | Part 2-30: Tests—Test Db: Damp heat, cyclic (12 h + 12 h cycle) | 60068.2.30 | Part 2.30: Tests—Test Db Damp heat, cyclic (12 + 12-hour cycle) |
| 60068-2-42 | Part 2-42: Tests—Test Kc: Sulphur dioxide test for contacts and connections | 60068.2.42 | Part 2.42: Tests—Test Kc: Sulphur dioxide test for contacts and connections |
| 60068-2-75 | Part 2-75: Tests—Test Eh: Hammer tests | 60068.2.75 | Part 2.75: Tests—Test Eh: Hammer tests |
| 60068-2-78 | Part 2-78: Tests—Test Cab: Damp heat, steady state | 60068.2.78 | Part 2.78: Tests—Test Cab: Damp heat, steady state |
| 60529 | Degrees of protection provided by enclosures (IP Code) | 60529 | Degrees of protection provided by enclosures (IP Code) |
| IEC | | AS IEC | |
| 61672 | Electroacoustics—Sound level meters | 61672 | Electroacoustics—Sound level meters |
| 61672-1 | Part 1: Specifications | 61672.1 | Part 2.1: Specification |

| IEC | | AS/NZS | |
|---|---|---|---|
| 60695 | Fire hazard testing | 60695 | Fire hazard testing |
| 60695-11-10 | Part 11-10: Test flames—50 W horizontal and vertical flame test methods | 60695.11.10 | Part 11.10: Test flames—50 W horizontal and vertical flame test methods |
| 60695-11-20 | Part 11-20: Test flames—500 W flame test methods | 60695.11.20 | Part 11.20: Test flames—500 W flame test methods |
| 61260 | Electroacoustics—Octave-band and fractional-octave-band filters | 4476 | Acoustics—Octave-band and fractional-octave-band filters |
| ISO | | AS | |
| 7240 | Fire detection and alarm systems | | Fire detection and alarm systems |
| 7240-1 | Part 1: General and definitions | 7240.1 | Part 1: General and definitions |
| ISO | | AS/NZS ISO | |
| 9001:2008 | Quality management systems—Requirements | 9001:2008 | Quality management systems—Requirements |

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex to which they apply. A ‘normative’ annex is an integral part of a standard, whereas an ‘informative’ annex is only for information and guidance.

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# INTRODUCTION

This part of ISO 7240 is based on European standard EN 54-24, prepared by the European Committee for Standardization's Technical Committee CEN/TC 72, *Fire detection and fire alarm systems*.

The purpose of a sound-system loudspeaker as a component of a sound system for emergency purposes (see ISO 7240-19) is to provide intelligible warning to people in or within the vicinity of a building in which a fire emergency has occurred and to enable such person(s) to take appropriate measures in accordance with a predetermined evacuation plan.

The primary reason for using a sound system for emergency purposes, instead of coded warnings given by aural alarm indicators (see the future ISO 7240-3) is to reduce the time taken for those at risk to recognize that an emergency exists, and to give clear instructions on what to do next. This means that sound-system loudspeakers are required to achieve a minimum acoustical performance, as well as constructional and environmental requirements, to be suitable for use in a sound system for emergency purposes.

This part of ISO 7240 recognizes that the exact nature of the acoustical requirements for sound-system loudspeakers varies according to the nature of the space into which they are installed. It therefore specifies the minimum requirements that apply to sound-system loudspeakers and a common method for testing their operational performance against parameters specified by the manufacturers.

This part of ISO 7240 gives common requirements for the construction and robustness of sound-system loudspeakers as well as their performance under climatic and mechanical conditions that are likely to occur in the service environment. As the types of loudspeaker considered in this part of ISO 7240 are passive electromechanical devices not involving sensitive electronic circuits, electromagnetic compatibility (EMC) tests have not been included. The loudspeakers have been classified for either an indoor or an outdoor application environment category.

This part of ISO 7240 requires that manufacturers specify certain characteristics in a consistent manner so that designers can make objective decisions about which loudspeaker to use in specific applications.

AUSTRALIAN STANDARD

# Fire detection and alarm systems

## Part 24:
## Sound-system loudspeakers

## 1 Scope

This part of ISO 7240 specifies requirements, test methods and performance criteria for loudspeakers intended to broadcast a warning of fire between a fire detection and alarm system and the occupants of a building (see item $C_4$ of ISO 7240-1:2005).

This part of ISO 7240 specifies loudspeakers for two types of application environment: type A, generally for indoor use, and type B, generally for outdoor use.

This part of ISO 7240 does not cover loudspeakers for special applications, for example loudspeakers for use in hazardous applications, if such applications require additional or other requirements or tests other than those given in this part of ISO 7240.

This part of ISO 7240 is not intended to cover addressable loudspeakers or loudspeakers with active components.

Audible alarm indicators are covered in the future ISO 7240-3.

## 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.

ISO 7240-1, *Fire detection and alarm systems — Part 1: General and definitions*

ISO 9001:2008, *Quality management systems — Requirements*

IEC 60068-1, *Environmental testing — Part 1: General and guidance*

IEC 60068-2-1, *Environmental testing — Part 2-1: Tests — Test A: Cold*

IEC 60068-2-2, *Environmental testing — Part 2-2: Tests — Test B: Dry heat*

IEC 60068-2-6, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal)*

IEC 60068-2-27, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock*

IEC 60068-2-30, *Environmental testing — Part 2-30: Tests — Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60068-2-42, *Environmental testing — Part 2-42: Tests — Test Kc: Sulphur dioxide test for contacts and connections*



 