Australian Standard®

Fire detection and alarm systems

Part 1: General and definitions

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 27 March 2007.
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The following are represented on Committee FP-002:

- Audio Engineering Society
- Australasian Fire Authorities Council
- Australian Building Codes Board
- Australian Electrical and Electronic Manufacturers Association
- Australian Industry Group
- Australian Institute of Building Surveyors
- CSIRO Manufacturing & Infrastructure Technology
- Deafness Forum of Australia
- Department of Defence
- Fire Protection Association Australia
- Institute of Security Executives
- National Electrical and Communications Association
- National Fire Industry Association
- Property Council of Australia

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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 a general description of the components of fire detection and alarm system.

This Standard is identical with, and has been reproduced from ISO 7240-1:2005, *Fire detection and alarm systems,* Part 1: *General and definitions*.

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

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this international standard' should read 'this Australian Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

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

References to International Standard or other Publication		*Australian/New Zealand Standard*	
ISO		AS	
7240	Fire detection and alarm systems (all parts)	7240	Fire detection and alarm systems (all parts)
12239	Environmental testing	12239	Environmental testing

CONTENTS

Page

INTRODUCTION

ISO 7240 (all parts) specifies components of fire detection and alarm systems, requirements for their interconnection and installation and the performance, testing and servicing of parts or of complete systems.

ISO 7240 (all parts) applies to fire detection and alarm systems for buildings. It can be used as a basis for the assessment of systems for other purposes, e.g. mines, ships. It does not preclude the manufacture or use of systems having special characteristics suitable for protection of specific risks against specific hazards.

A fire detection and alarm system is required to function satisfactorily not only in the event of fire, but also during and after exposure to conditions likely to be met in practice such as corrosion, vibration, direct impact, indirect shock and electromagnetic interference. Some tests specified are intended to assess the performance of system components under such conditions.

The performance of components of fire detection and alarm systems is assessed from the results obtained in the specific tests; ISO 7240 (all parts) is not intended to place any other restrictions on the design and construction of such components.

If appropriate, ISO 7240 (all parts) can be applied to the detection part of extinguishing systems, excluding sprinkler heads, although the sensitivity requirements might not be applicable in every instance.

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Fire detection and alarm systems Part 1: General and definitions

1 Scope

This part of ISO 7240 provides a set of general guidelines and definitions to be used in describing the fire detection and alarm system equipment, tests and requirements in the other parts of ISO 7240.

The components that a fire detection and alarm system can have are shown in Figure 1. Item C of Figure 1 can be replaced by a sound system for emergency purposes, the components of which are shown in Figure 2.

Fire detectors can be self-contained: these are devices containing within one housing all the components, except possibly the energy source, necessary for detection of fire and giving an audible alarm.

NOTE Inter-connected smoke alarms complying with ISO 12239 and not connected to control and indicating equipment do not form a fire detection and alarm system as defined in this part of ISO 7240.

2 General guidelines

2.1 The purpose of a fire detection and alarm system is to detect fire at the earliest practicable moment and to give an alarm so that the appropriate action can be taken (e.g. evacuation of occupants, summoning the firefighting service, triggering of extinguishing equipment, control of smoke doors, dampers and fans).

A fire alarm system may be activated by automatic detection devices or by manual operation.

2.2 The general principles given in 2.3 to 2.7 are guidelines to the design and construction of fire detection and alarm systems.

2.3 A fire detection and alarm system should

— detect quickly enough to fulfil its intended function;

— reliably transmit the detection signal to the control and indicating equipment and, if applicable, the fire alarm receiving station;

— translate this detection signal into a clear alarm signal that attracts the attention of the occupant in an immediate and unmistakable way;

— remain insensitive to phenomena other than those which its function is to detect;

— signal immediately and clearly any supervised fault that might jeopardize the correct performance of the system.

2.4 A fire detection and alarm system should not

— be adversely affected by any other systems whether associated with it or not;

— be rendered partially or totally inoperative by the fire or the phenomenon which it is designed to detect before the fire or phenomenon has been detected.