

Australian Standard<sup>®</sup>

**Fire detection and alarm systems**

**Part 12: Line type smoke detectors  
using a transmitted optical beam**



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 25 January 2007.  
This Standard was published on 12 March 2007.

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The following are represented on Committee FP-002:

- Audio Engineering Society
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  - Australian Chamber of Commerce and Industry
  - Australian Electrical and Electronic Manufacturers Association
  - Australian Industry Group
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  - National Electrical and Communications Association
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- 

This Standard was issued in draft form for comment as DR 05186.

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 public comment period.

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Australian Standard<sup>®</sup>

## **Fire detection and alarm systems**

### **Part 12: Line type smoke detectors using a transmitted optical beam**

First published as AS 7240.12—2007.

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Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 8097 0

## PREFACE

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

This Standard is identical with, and has been reproduced from ISO 7240-12:2006, *Fire detection and alarm systems, Part 12: Line type smoke detectors using a transmitted optical beam*.

Committee FP-002 intends to review the applicability of AS 1603.7, *Automatic fire detection and alarm systems—Optical beam smoke detectors* after the publication of this Standard.

The objective of this Standard is to provide requirements and test methods for line type smoke detectors using a transmitting light beam.

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

- (a) Its number appears on the cover and title page while the International Standard number appears only on the cover.
- (b) In the source text ‘this International Standard’ should read ‘this Australian Standard’.
- (c) 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:

<i>International Standard</i>		<i>Australian/New Zealand Standard</i>	
IEC		AS	
60068	Environmental testing	60068	Environmental testing
60068-1	General and guidance	60068.1	General and guidance
60068-2-1	Tests: Tests A: Cold	60068.2.1	Tests—Test A: Cold
60068-2-2	Tests: Tests B: Dry heat	60068.2.2	Tests—Test B: Dry heat
60068-2-6	Tests: Tests Fc: Vibration (sinusoidal)	60068.2.6	Tests—Test Fc: Vibration (sinusoidal)
60068-2-27	Tests: Test Ea and guidance: Shock	60068.2.27	Tests—Test Ea and guidance: Shock
60068-2-42	Tests: Test Kc: Sulphur dioxide test for contacts and connections	60068.2.42	Tests—Test Kc: Sulphur dioxide test for contacts and connections
60068-2-78	Tests: Test Cab: Damp heat, steady state	60068.2.78	Tests—Test Cab: Damp heat, steady state
		AS/NZS	
60081	Double-capped fluorescent lamps— Performance specifications	4782	Double-capped fluorescent lamps
		4782.1	Performance specifications— General (IEC 60081:2000, MOD)

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, drawn up by ISO/TC 21/SC 3, is based on a draft prepared by the European Committee for Standardization's CEN/TC 72, *Fire detection and fire alarm systems*.

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, including corrosion, vibration, direct impact, indirect shock and electromagnetic interference. Specific tests are intended to assess the performance of the smoke detectors under such conditions.

This part of ISO 7240 is not intended to place any other restrictions on the design and construction of such detectors.

NOTES

AUSTRALIAN STANDARD

## Fire detection and alarm systems—

Part 12:

### Line type smoke detectors using a transmitting light beam

#### 1 Scope

This part of ISO 7240 specifies requirements, test methods and performance criteria for line-type smoke detectors for use in fire detection systems installed in buildings. The detectors consist of at least a transmitter and a receiver and can include reflector(s), for the detection of smoke by the attenuation and/or changes in attenuation of an optical beam.

This part of ISO 7240 does not cover

- line-type smoke detectors designed to operate with separations between opposed components of less than 1 m;
- line-type smoke detectors whose optical path length is defined or adjusted by an integral mechanical connection;
- line-type smoke detectors with special characteristics, which cannot be assessed by the test methods in this part of ISO 7240.

NOTE The term “optical” is used to describe that part of the electromagnetic spectrum produced by the transmitter to which the receiver is responsive; this is not restricted to visible wavelengths.

#### 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 209-1, *Wrought aluminium and aluminium alloys — Chemical composition and forms of products — Part 1: Chemical composition*

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

IEC 60064, *Tungsten filament lamps for domestic and similar general lighting purposes — Performance requirements*

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

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

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

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

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

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

IEC 60068-2-78, *Environmental testing — Part 2-78: Tests. Test Cab: Damp heat, steady state*