Australian Standard™

Fire detection, warning, control and intercom systems—System design, installation and commissioning

Part 1: Fire

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 2 March 2004.

This Standard was published on 29 April 2004.

The following are represented on Committee FP-002:

Audio Engineering Society
Australasian Fire Authorities Council
Australian Building Codes Board
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Australian Industry Group
Australian Institute of Building Surveyors
Deafness Forum of Australia
Department of Defence (Australia)
Fire Protection Association Australia
Institute of Security Executives
National Electrical and Communications Association
Property Council of Australia
Scientific Services Laboratory A Business Unit of AGAL

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Web Shop at www.standards.com.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

Australian Standards™ and other products and services developed by Standards Australia are published and distributed under contract by SAI Global, which operates the Standards Web Shop.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to the Chief Executive, Standards Australia, GPO Box 476, Sydney, NSW 2001.

This Standard was issued in draft form for comment as DR 02226.

AS 1670.1—2004
(Incorporating Amendment No. 1)

Australian Standard™

Fire detection, warning, control and intercom systems—System design, installation and commissioning

Part 1: Fire

Originated as part of AS CA15—1961.
Previous edition AS 1670.1—1995.
AS 1670.1—1995 and AS 1670.2—1997 revised, amalgamated and designated as AS 1670.1—2004.
Reissued incorporating Amendment No. 1 (November 2005).

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

ISBN 0 7337 5932 7

PREFACE

This Standard was prepared by the Standards Australia Committee FP-002; Fire Detection, Warning, Control and Intercom Systems, to supersede AS 1670.1—1995, *Fire detection, warning, control and intercom systems—System design, installation and commissioning,* Part 1: *Fire*, and AS 1670.2—1997, *Fire detection, warning, control and intercom systems—System design, installation and commissioning*, Part 2*: Local fire* (which is being withdrawn). Its preparation is supported by AS 1603, *Automatic fire detection and alarm systems*, AS 4428, *Control and indicating equipment*, AS 7240, *Fire detection and fire alarm systems* and EN 54, *Fire detection and fire alarm systems* component Standards used in an automatic fire detection and alarm system and installed in accordance with this Standard.

This Standard incorporates Amendment No. 1 (November 2005). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

This Standard will be referenced in the Building Code of Australia 2004, thereby superseding AS 1670.1—1995 and AS 1670.2—1997, which will be withdrawn 12 months from the date of publication of this Standard.

For the first time this Standard permits the installation of specific components that comply with ISO equipment Standards (issued as AS Standards) and EN 54. Committee FP-002 A1 intends to review the application of existing Australian equipment Standards where International Standards exist. This will take effect five years after the publication of the Australian adoption of the International Standards. Smoke detectors, heat detectors, power supply units and control and indicating equipment Standards are expected to be among the A1 first to be reviewed. Other parts of AS 1603 for equipment for which no International Standard exists will remain current.

This edition covers both monitored and local fire detection and alarm systems and also allows the use of smoke and heat alarms in some instances. Audible warning within the building now specifies signals conforming to ISO 7731, *Ergonomics—Danger signals for work places—Auditory danger signals* and ISO 8201, *Acoustics; Audible emergency evacuation signal*. The building may have a sound system for emergency purposes that complies with AS 1670.4, *Fire detection, warning, control and intercom systems—Sound systems and intercom systems for emergency purposes*. AS 1670.4 has replaced the emergency warning system installation requirements specified in AS 2220.2, *Emergency warning and intercommunication systems in buildings,* Part 2*: Equipment design and manufacture*.

The use of the strobes has replaced bells at the main entrance, which is now identified as the designated building entry point. The new term, designated site entry point, has been introduced for multi-building sites.

Appendix A ‘Guidance for the selection of detectors’ assists in the design of fire detection and alarm systems. Appendices B and C provide guidance for the installation of wiring systems and calculation of power source capacity.

The commissioning section encompasses Appendices E and F, which are report forms to indicate the installation content and its compliance with this Standard.

Maintenance requirements for fire detection and alarm equipment are given in AS 1851, *Maintenance of fire protection equipment*.

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

This Standard incorporates commentary on some of the clauses. The commentary directly follows the relevant clause, is designated by ‘C’ preceding the clause number and is printed in italics in a box. The commentary is for information only and does not need to be followed for compliance with the Standard.

CONTENTS

Page

Page

STANDARDS AUSTRALIA

Australian Standard

Fire detection, warning, control and intercom systems—System design, installation and commissioning

Part 1: Fire

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out requirements for the design, installation and commissioning of fire detection and alarm systems comprising components complying with the requirements of the appropriate product Standards.

1.2 APPLICATION

All fire detection and alarm systems shall comply with the requirements of Section 2 and Section 3, with the additional requirements of Section 4, Section 5, or Section 6 according to the actuating device type, and the commissioning requirements of Section 7.

Where a fire detection and alarm system is ancillary to an automatic fire suppression system, the detection and alarm system shall comply with the appropriate requirements of this Standard.

This Standard requires that detection be provided throughout all areas of the building, however, where systems are installed to solely meet the requirements of the BCA, detectors may only be required in certain nominated areas.

1.3 REFERENCED DOCUMENTS

AS	
1259	Acoustics—Sound level meters
1259.1	Non-integrating
1603	Automatic fire detection and alarm systems
1603.1	Part 1: Heat detectors
1603.2	Part 2: Point type smoke detectors
1603.3	Part 3: Heat alarms
1603.5	Part 5: Manual call points
1603.7	Part 7: Optical beam smoke detectors
1603.8	Part 8: Multi-point aspirated smoke detectors
1603.11	Part 11: Visual warning devices
1603.13	Part 13 Duct sampling units
1603.14	Part 14: Point type carbon monoxide (CO) fire detectors
1603.15	Part 15: Remote indicators
1668	The use of mechanical ventilation and air-conditioning in buildings
1668.1	Part 1: Fire and smoke control in multi-compartment buildings
1670	Fire detection, warning, control and intercom systems—System design, installation and commissioning
1670.3	Part 3: Monitoring network performance
1670.4	Part 4: Sound systems and intercom systems for emergency purposes

