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AUTOMATIC FIRE DETECTION AND ALARM SYSTEMS
Part 4—CONTROL AND INDICATING EQUIPMENT

STANDARDS ASSOCIATION OF AUSTRALIA
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The following interests are represented on Committee FP/2:

Australian Electrical Electronic Manufacturers Association Ltd
Australian Uniform Building Regulations Co-ordinating Council
Board of Fire Commissioners of New South Wales
Building Owners and Managers Association of Australia Ltd
Commonwealth Fire Board
Confederation of Western Australian Industry
Department of Aviation
Department of Home Affairs and Environment
Department of Housing and Construction
Department of Public Works, Western Australia
Experimental Building Station
Fire Protection Industry Association of Australia Ltd
Insurance Council of Australia Ltd
Metropolitan Fire Brigades Board, Melbourne
Metropolitan Fire Brigades Board, Brisbane
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AUSTRALIAN STANDARD

AUTOMATIC FIRE DETECTION AND ALARM SYSTEMS

Part 4
CONTROL AND INDICATING EQUIPMENT

AS 1603.4—1985

This is incorrect checked with Kentley, T.S.O. 1985-01-17. It does not supersede any part of AS1603. that will be superseded by AS1603.1 when published. EE

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PREFACE

This standard was prepared by the Association's Committee on Automatic Fire Detection and Alarm Systems. The requirements for control and indicating equipment (known in the past as the 'fire indicating board') were included in AS 1670—1974, SAA Code for Automatic Fire Alarm Installations. The revised AS 1670 will not specify construction details of equipment except where it is applicable to the installation requirements. This will enable the various items of the fire detection system to have their own separate specifications. Specifications for fire alarm equipment will be published in the following parts of AS 1603:

Part 1—Heat Detectors

Part 2—Smoke Detectors

Part 3—Flame Detectors

Part 4—Control and Indicating Equipment

Part 5—Manually Operated Fire Alarm Call Points*

Part 6—Fire Alarm Bells and Bell Simulators

Maintenance requirements for fire alarm equipment will be included in various parts of AS 1851, Maintenance of Fire Protection Equipment.

This standard supersedes the relevant clauses of Section 2 of AS 1670—1983 twelve months after the date of publication. It is envisaged that this standard will not be specified by any Regulatory Authority until such time as the revised edition of AS 1670—1983 and the part of AS 1851 setting out maintenance requirements for fire alarm equipment are published.

Those aspects relating to circuit design and construction, component derating and long-term reliability are largely the responsibility of the equipment designer. The designer should be aware of other relevant standards relating to quality and reliability of equipment.

The assessment of the performance of the equipment under the various test conditions specified is intended to be a measure of the reliability of the equipment during its most onerous service. The temperature/humidity tests specified are selected from the AS 1099, Parts 1 and 2, and are those considered most closely related to the Australian climate.

The fire detection and alarm system must be protected against failure due to voltage transients induced into the system. Equipment should be designed to withstand the effects of the transients and for this reason transient voltage tests which include tests for impulse voltage withstand and high frequency disturbance have been included in the standard.

An alarm delay function has also been introduced into the alarm registration facility so that fewer alarms due to transient non-fire conditions are transmitted.

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*Revision of AS 2036-1977, Manually Operated Fire Alarm Call Points.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
AUTOMATIC FIRE DETECTION AND ALARM SYSTEMS

PART 4—CONTROL AND INDICATING EQUIPMENT

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies the functional requirements and the performance criteria for control and indicating equipment (CIE) used in automatic fire detection and alarm systems within buildings or fire detection systems associated with other fire protection functions.

1.2 APPLICATION. The requirements of this standard apply to the CIE forming part of any fire detection and alarm system installed in accordance with AS 1670. The standard is also applicable where the CIE is interfaced with a building services system or is linked to ancillary extinguishing, air-handling systems, or other type of monitoring or control systems.

The CIE facilities and functions which must be provided to enable a system to identify a fire condition, control fire warning and suppression systems, and transmit an alarm signal to a remote receiving station are specified in Section 2.

The mechanical and electrical requirements for the design and construction of the CIE are specified in Section 3.

The performance requirements of the CIE are specified in Section 4 with details of the test procedures set out in Appendices C to F.

Section 5 specifies the form and content of the operator's manual which is designed to accompany the CIE in service. Details of the technical manual are also specified.

1.3 REFERENCED DOCUMENTS. A list with titles of the documents referred to in this standard is given in the Annex.

1.4 DEFINITIONS. For the purpose of this standard, the following definitions apply:

NOTE: The application of the definitions is illustrated in Fig. 1.1.

1.4.1 Actuating device—a device capable of being operated automatically or manually to initiate an alarm signal, e.g. a detector, a manual call point, or a pressure switch.

1.4.2 Alarm zone—the specific portion of a building or complex identified by a particular alarm zone facility.

1.4.3 Alarm zone circuit (AZC)—the link or path which carries signals from an actuating device(s) to an alarm zone facility.

1.4.4 Alarm zone facility (AZF)—that part of the control and indicating equipment which registers and indicates signals (alarm and fault) received from its alarm zone circuit. It also transmits appropriate signals to other control and indicating facilities (see Clause 2.1.1.2).

1.4.5 Ancillary control facility (ACF)—that portion of the control and indicating equipment which on receipt of a signal initiates predetermined actions in external ancillary devices.

1.4.6 Control and indicating equipment (CIE)—a combination of control equipment and indicating equipment.

1.4.7 Control equipment—equipment which controls the receipt and transmission of signals within the fire detection and alarm system or initiates other action.

1.4.8 Fire alarm system—an arrangement of components and apparatus for giving an audible, visible, or other perceptible alarm of fire, and which may also initiate other action.

1.4.9 Fire control station—a centre which receives alarm signals and initiates a response from a firefighting service.

NOTE: Fire control stations are normally under the control of, or approved by, the Fire Authority.

1.4.10 Fire detection system—an arrangement of detectors and control and indicating equipment employed for automatically detecting fire and initiating other action as arranged.

1.4.11 Fire indicator panel (FIP)—a control and indicating panel containing the alarm zone facilities. (See also Clauses 1.4.17 and 1.4.18.)

1.4.12 Indicating equipment—the part of a fire detection and or alarm system which provides indication of any warning signals (alarm and fault) received by the control equipment.

1.4.13 Interface—the interconnection between equipment which permits the transfer of data.

1.4.14 Master alarm facility (MAF)—that part of the CIE which receives alarm and fault signals from any alarm zone facility and initiates the common signal (alarm and/or fault) for transmission to the fire control station where appropriate. Bells and other ancillary functions may be initiated from this facility.

1.4.15 Mimic panel (MP)—a repeater panel which shows in diagrammatic form the locations of the alarm zones, e.g. building floor plan or level plan.