AS 1851—2012
(Incorporating Amendment No. 1)

AS 1851—2012

Routine service of fire protection systems and equipment

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The following are represented on Committee FP-001:

- Australian Institute of Refrigeration, Air-conditioning and Heating
- Australasian Fire Authorities Council
- Communications, Electrical and Plumbing Union
- Department of Defence
- Department of Human Services
- Fire Protection Association of Australia
- Engineers Australia
- National Association of Testing Authorities, Australia
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  FP-002—Fire Detection and Alarms
  FP-003—Fire Extinguishers
  FP-004—Automatic Fire Sprinkler Systems
  FP-007—Fire Hose Reels
  FP-008—Fire Pumpsets
  FP-009—Fire Hydrants
  FP-011—Special Fire Hazards
  FP-017—Emergency Management Procedures
  FP-019—Passive Fire Systems
  ME-062—Ventilation and Airconditioning

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PREFACE

This Standard was prepared by the Standards Australia Committee FP-001, Maintenance of Fire Protection Systems and Equipment, to supersede AS 1851—2005, *Maintenance of fire protection systems and equipment*.

This Standard incorporates Amendment No. 1 (November 2016). 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 edition of AS 1851 incorporates a considerable amount of new material and technical changes for the routine service (maintenance) of fire protection systems and equipment in the light of user experience and feedback from regulatory bodies.

The scope of this Standard is applicable to the routine service procedures for fire protection systems and fire equipment. Routine service procedures for pre-engineered fire systems and other building safety measures such as emergency lighting and exit signs, emergency lifts or standby generator sets can be found in the relevant system Standard.

This edition retains a uniform structure for routine service (maintenance) requirements. Section 1 sets out general requirements applying to all systems and equipment. The other Sections contain the additional requirements specific to particular fire protection systems or equipment.

The following summarizes the major changes made to AS 1851—2005:

(a) Title changed to overcome reported ambiguity but still reflect the concept of inspection, test and preventive maintenance. The term 'maintenance' has been replaced by 'routine service'.

(b) Restructured documentation requirements into service records and reporting to assist regulatory use.

(c) Defined the relationship between initial installation, routine service and annual regulatory compliance (see Figure 1.7).

(d) Critically appraised and refined the routine service technical requirements in light of field experience and studies including, battery load testing, detector sensitivity testing and system interface testing (examples include change in frequencies and specific application instructions).

(e) Facilitating the implementation of the Standard by the responsible entity and service provider (e.g. the consolidation of sections and consistency across sections, for the fire alarm, special hazards and mechanical services).

(f) A thorough overhaul of the general requirements of Section 1 to remove administrative requirements and avoid regulatory conflict.

(g) Tables in Sections 2 to 14 changed from type based to frequency based, and yearly service separated from supportive routine service schedules.

(h) Clarified requirements for interface testing.

(i) Clarified role of commissioning and baseline data as part of the approved design.

(j) Deletion of specific competency qualifications.

(k) Distinguished between critical defects, non-critical defects and non-conformances.

(l) Extensively revised records (logbooks, tags, labels and summary records) and reporting requirements.

(m) Removed ambiguity relating to current design Standards versus the design Standards applicable at the time of original systems installation, i.e. the approved design.

(n) Sections 6 to 10 of the 2005 edition covering fire detection, alarms, sound systems and intercom systems have been combined in a new Section 6 with the previous Section 8 (Fire alarm monitoring) being removed from this revised document.

(o) The routine service requirements for the fire detection and control equipment of special hazard systems and smoke hazard management systems have been relocated from their respective sections into Section 6.

(p) A new Section 5 has been included, covering water storage tanks for fire protection systems to address the new design Standard AS 2304, *Water storage tanks for fire protection systems*.

(q) Sections 11 (Gaseous fire extinguishing systems), 12 (Fixed aerosol systems) and 13 (Water mist systems) of the 2005 edition have been combined in a new Section 7 (Special hazards).

(r) Several new appendices have been included to expand on Section 1 content— baseline data (Appendix C) and systems interface testing (Appendix D), with two normative appendices, battery capacity testing (Appendix F) and fire detector testing (Appendix G). Extensive detail on mechanical services included in the normative section of the 2005 edition has been relocated in two appendices, both informative.

A1 The objectives of Amendment 1 are to address editorial errors and baseline data.

Since its implementation, it became clear that baseline data in AS 1851—2012 had not been interpreted correctly by the fire protection industry. As such, FP-001 has revised this to clarify the intent of the committee.

The definition of baseline data and Clause 1.8 have been updated to reflect that the baseline data required by AS 1851—2012 is only what is required to verify the result of a service activity and only required where such baseline data was required by the approved design.

Appendix C and references to specific baseline data in the service schedules were removed accordingly so that the focus is, as intended, only on what baseline data was required by the approved design.

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 the Standard, whereas an ‘informative’ appendix is only for information and guidance.

Notes in this Standard are advisory only.

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

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FOREWORD

The criteria adopted for revising this Standard include reliability, integrity, functionality and performance of fire protection systems and equipment. Consideration has also been given to the interfaces between fire protection systems and other building safety systems.

The Standard contains inspection, test, preventive maintenance and survey requirements to demonstrate that the fire systems and equipment installed in a building are achieving a standard of performance to which they were designed (the approved design). The Standard may be applied to fire systems and equipment regardless of building age. The Standard may be applied to demonstrate the minimum performance standard required by the National Construction Code (NCC) BCA, Volume 1, for new buildings or it may also be applied to existing buildings constructed to an approved design prior to the current BCA edition of the NCC. The Standard may also be used to develop specific routine service requirements for fire systems or equipment that are part of an alternative solution designed to satisfy the performance requirements of the NCC. Application of the Standard may also support health and safety acts and regulations.

The scope of this Standard is identified as Stage 2 of the process and procedures diagram in Figure 1.7. It includes the inspection, test, preventive maintenance and survey, coupled with records to be kept and reports to be made, culminating in the issue of a yearly condition report.

The revised inspection, test, preventive maintenance and survey regimes in this Standard address the functional aspects of installed fire protection systems and equipment on a periodic basis, with the objective that systems and equipment operate effectively at all times. The regimes aim to ensure that fire protection systems and equipment are in working order throughout the year or period of interest; not only at the time of annual inspection and test. A significant objective of this Standard is to provide reliability of fire protection systems and equipment, linking design, installation, commissioning and maintenance.

This Standard includes a requirement to annually test all aspects of system interconnection; for example, detection and alarm systems with automatic smoke exhaust plant, alarm systems with stairwell pressurization, automatic fire sprinkler systems with mechanical services fire mode operation and warning facilities. This will require adequate documentation of interconnections between the various systems as required in the design, installation and commissioning Standards.

Training of personnel to the appropriate levels for inspection, testing, preventive maintenance and survey of fire protection systems has not been directly addressed in this Standard; however, it is recognized that effective maintenance programs depend on suitably competent personnel.

This Standard provides a set of requirements to increase the probability that fire protection systems and equipment will function as intended by the respective design, installation and commissioning Standards, thus achieving reliability.

Continuous correct functioning is a basic criterion, and the yearly survey requirement also assures that system performance capability (efficacy) is not degraded by building or occupancy changes, which could otherwise adversely affect the capability of the system to perform as originally intended.

Routine service (maintenance) is concerned with the principle that a system will continue to perform to the approved design when routine service is conducted on a pre-determined and regular basis. Surveys are scripted activities in the routine service schedules as a check for any component degradation or building changes that may impact on system performance. The survey requirements of this Standard do not require auditing to AS 4655, *Fire safety audits*.

STANDARDS AUSTRALIA

Australian Standard
Routine service of fire protection systems and equipment

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out requirements for the routine servicing (inspection, testing, preventive maintenance and survey) of fire protection systems and equipment.

1.2 OBJECTIVE

The objective of this Standard is to maintain the reliability of fire protection systems and equipment such that they continue to meet the requirements of the approved design and are likely to do so until the next scheduled activity.

1.3 APPLICATION

This Standard provides a systematic basis for minimum routine service applicable to fire protection systems and equipment. It also may be used to develop specific routine service requirements for systems or equipment that are part of an alternative solution. It requires evidence, in the form of records and reports of completion of the periodic inspection (including survey), testing and preventive maintenance activities required by this Standard.

NOTE: The documentary evidence resulting from compliance with this Standard is intended to support the responsible entity to satisfy regulatory obligations.

1.4 REFERENCED DOCUMENTS

The documents referred to in this Standard are listed in Appendix A.

1.5 DEFINITIONS

1.5.1 Adverse operating environments

Any environment or condition that may adversely affect the reliability of fire protection systems and equipment (see Clause 2.13).

1.5.2 Approved design

The design of fire protection systems and equipment approved by the authority having jurisdiction at the time of installation or subsequent modification.

1.5.3 Authority having jurisdiction

A minister of the Crown, a government department, or other authority having power to issue regulations, orders or other instructions having the force of law or, in cases where none of these apply, the responsible entity.

1.5.4 Baseline data

A1 Data either provided by or derived from the approved design and commissioning thereof, which, when and where provided, would serve as a basis for verification of results of routine servicing.