

Australian/New Zealand Standard™

Emergency lighting and exit signs for buildings

Part 2: Routine service and maintenance



AS/NZS 2293.2:2019

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee LG-007, Emergency Lighting In Buildings. It was approved on behalf of the Council of Standards Australia on 25 March 2019 and by the New Zealand Standards Approval Board on 30 January 2019.
This Standard was published on 9 April 2019.

The following are represented on Committee LG-007:

Australasian Fire and Emergency Service Authorities Council
Australian Industry Group
Business New Zealand
Engineers Australia
Fire Protection Association Australia
IES: The Lighting Society
Lighting Council Australia
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This Standard was issued in draft form for comment as DR AS/NZS 2293.2:2018.

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Emergency lighting and exit signs for buildings

Part 2: Routine service and maintenance

Originated in Australia as AS 2293.2—1979.
Originated in New Zealand as part of NZS 6742:1971.
Previous edition AS/NZS 2293.2:1995.
Fourth edition 2019.

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ISBN 978 1 76072 421 4

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee LG-007, Emergency Lighting for Buildings, to supersede AS/NZS 2293.2:1995, *Emergency escape lighting and exit signs for buildings, Part 2: Inspection and maintenance*.

The objective of this Standard is to establish the performance criteria for the routine service and maintenance of emergency lighting and exit sign systems, such that they continue to safeguard occupants until the next scheduled activity from injury by having adequate emergency lighting and identification of exits, and provide direction to exits in accordance with the approved design.

The changes in this edition are primarily a consequence of alterations made in AS/NZS 2293.1:2018 and AS/NZS 2293.3:2018.

The following changes of significance have been introduced:

- (a) The layout has been aligned with AS 1851, *Routine service of fire protection systems and equipment*. A series of tables and figures has been introduced to simplify application, and reduce duplication and complexity.
- (b) Introduction of—
 - (i) baseline data against which maintenance and ongoing system performance requirements are measured;
 - (ii) concept of routine service, including preventative maintenance;
 - (iii) procedures for intervals greater than 12 months;
 - (iv) concepts of critical, non-critical defect and non-conformance along with requirements for reporting;
 - (v) light source life (LSL) assessment for LED luminaires and exit signs; and
 - (vi) additional information and guidance in Appendices C, D, E, F and G.
- (c) Update references and requirements to align with most recent International and Australian Standards.

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 includes a 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 and guidance and does not form part of the Standard.

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Australian/New Zealand Standard
Emergency lighting and exit signs for buildings**Part 2: Routine service and maintenance**

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out requirements and test procedures for the routine service and maintenance necessary to ensure emergency lighting and exit sign systems are in a state of readiness for operation at all times.

1.2 APPLICATION

This Standard provides a systematic basis for minimum routine service applicable for emergency lighting and exit sign systems. 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. It may also be used to develop specific routine service requirements for systems or equipment that are part of a performance solution.

NOTE: This Standard may assist users meet other obligations. Recommendations on the removal, collection, movement, disposal or recycling of components or luminaires that may contain hazardous materials, for example, fluorescent lamps (mercury) and batteries (cadmium, nickel or lead), is included in Appendix G.

1.3 NORMATIVE REFERENCES

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document:

NOTE: Documents referenced for informative purposes are provided in the Bibliography.

AS

- 2676 Guide to the installation, maintenance, testing and replacement of secondary batteries in building
- 2676.1 Part 1: Vented cells
- 2676.2 Part 2: Sealed cells

AS/NZS

- 2293 Emergency lighting and exit signs for buildings
- 2293.1 Part 1: System design, installation and operation
- 2293.3 Part 3: Emergency luminaires and exit signs

IEC

- 62485 Safety requirements for secondary batteries and battery installations
- 62485-1 Part 1: General safety information
- 62485-2 Part 2: Stationary batteries

1.4 DEFINITIONS

For the purpose of this Standard, the definitions given in AS/NZS 2293.1 apply along with the following:

1.4.1 Adverse operating environments

Any environment or condition that may adversely affect the performance or reliability of an emergency lighting or exit sign system.

1.4.2 Approved design

The final design, as commissioned or subsequently modified.

NOTES:

- 1 In Australia, this is the building solution as defined within the NCC.
- 2 In New Zealand, this is defined by the New Zealand Building Code.

1.4.3 Baseline data

Data either provided by or derived from the approved design and commissioning thereof which, when and where provided serve as a basis for verification of results of inspection, test and survey.

1.4.4 Competent person

A person who has acquired through training, qualification or experience or a combination of these, the knowledge and skill enabling that person to perform the required task correctly.

1.4.5 Defect classification and non-conformance

1.4.5.1 Critical defect

A defect that renders a system inoperative.

NOTE: A critical defect is likely to affect an entire system and is reasonably likely to have a significant adverse impact upon the safety of occupants of part, or all, of a building. Examples include, in a central battery system the failure of the battery or failure to sense loss of supply, a non-operational exit sign where it is the only available sign in a space, an impaired emergency luminaire, which is unable to provide sufficient light to an important aspect of a lighting system, i.e. at stairs, a change in floor level or direction.

1.4.5.2 Non-critical defect

A system impairment or faulty component not likely to critically affect the operation of the system.

NOTE: Examples of non-critical defects include failure of one luminaire within an area served by multiple luminaires, functioning self-contained luminaires with an inoperative manual or automatic test system.

1.4.5.3 Non-conformance

Missing information or incorrect feature that does not affect the system operation but is required to facilitate ongoing routine service.

NOTE: Examples of non-conformance include inadequate baseline data, missing baseline data maintenance records or reports, no equipment location or identification shown or illegible labels.

1.4.6 Inspect/inspection

Visual examination of the components to record settings, parameters, physical condition or fitness for purpose.

1.4.7 Light source life (LSL)

Length of time during which a population of light sources provides more than a minimum luminous flux percentage and less than the claim for failure fraction percentage under specified conditions.

NOTE: For further information refer to IEC 63013.

1.4.8 Preventative maintenance

Actions including cleaning, adjustment and replacement of components at a predetermined frequency, to minimize incidence of failure.

1.4.9 Rectify/rectification

The repair or replacement of components found to be defective.

1.4.10 Responsible entity

The entity responsible for the routine service of the emergency lighting or exit sign system.

NOTE: Typically, the building owner, the building occupier or the building owner's agent.

1.4.11 Routine service

Inspection (including survey), test and preventative maintenance at specific intervals.

1.4.12 Shall

Indicates that a statement is mandatory.

1.4.13 Should

Indicates a recommendation.

1.4.14 Survey

Visual inspection, typically conducted from floor level, to identify if the emergency lighting or exit sign system has been adversely altered, damaged or compromised by changes in the occupancy, environment, construction or building.

1.4.15 Test

An action or procedure undertaken to confirm the correct operation or performance of a component or system.

SECTION 2 GENERAL REQUIREMENTS

2.1 ROUTINE SERVICE AND MAINTENANCE OF THE INSTALLATION

The emergency lighting and exit sign system shall be inspected, tested and maintained in accordance with the relevant procedures specified in this Standard. The inspection, test, survey and maintenance procedures shall be carried out by competent persons only.

2.2 BASELINE DATA OF THE INSTALLATION

The baseline data for the emergency lighting and exit sign system may be needed to verify the result of a routine service activity required by an applicable service schedule.

The baseline data for the emergency lighting and exit sign system shall be readily accessible to service personnel.

The baseline data required by this Standard shall be that which is necessary to verify a routine service activity result.

Irrespective of the availability of baseline data, the routine service activity shall be carried out and the result recorded and reported.

Where baseline data is available, the routine service result shall be verified against it.

Where required baseline data is not available, its unavailability shall be recorded and reported as a non-conformance.

The baseline data shall include the required in-service duration.

In Australia, refer to AS/NZS 2293.1. For most situations, the in-service duration is 90 minutes.

In New Zealand, refer to the New Zealand Building Code.

NOTES:

- 1 The supply and generation of baseline data is beyond the scope of this Standard.
- 2 A variety of emergency lighting and exit sign light source and battery technology or monitoring systems may be available. All information relating to the correct servicing of emergency lighting, exit signs or related systems, irrespective of technology used, should be held with the installation baseline data. For example, luminaire information and any operating and maintenance manuals should be available and retained for the life of the building.
- 3 Requirements that relate to emergency luminaires and exit signs are detailed in AS/NZS 2293.3.

2.3 SERVICE PRECAUTIONS

Prior to commencing any routine service, the following precautions shall be taken:

- (a) Determine the risk and ensure all reasonable precautions will be taken to not adversely affect the normal operation of any system, except for those systems to be serviced, or to adversely affect safety of the building occupants.
- (b) Inform the responsible entity—
 - (i) that a routine service is to be carried out, which may adversely affect the occupants or operations of the building;
 - (ii) of the extent and expected duration of the impairment during the routine service and maintenance so that alternative safety arrangements can be implemented; and

- (iii) that part of the building may be without emergency lighting when a discharge test of the emergency luminaires and exit signs is undertaken.

NOTE: When selecting a time for the discharge test, the nature of the occupancy of the building should be considered. Risk mitigation may include undertaking a discharge test of tenanted floors during daylight and fire stairs after hours or conducting the test discharge at a time that will permit recharging of the battery when the building is unoccupied.

- (c) Ensure that no interruption to the normal supply has taken place for a period of at least 16 h prior to conducting a discharge test of the emergency luminaires and exit signs.

On completion of any routine service and maintenance, all controls shall be returned to their prior state. Any function left impaired, disabled or not restored to 'normal', shall be recorded in the service and maintenance records.

2.4 SYSTEM RETROFIT

Absent elements or components of a system or systems that were not required as part of an approved design to a Standard that is now superseded are not required to be retrofitted and the related routine service activity shall not be considered a defect or non-conformance if not able to be performed.

2.5 FREQUENCY AND TOLERANCES OF ROUTINE SERVICE INTERVALS

2.5.1 General

The service frequencies and tolerances shall be in accordance with Appendix A.

The service frequency shall be scheduled from the date of the initial service activity. Tolerances shall be applied to the scheduled date. An activity that is not conducted within the tolerance period for that activity shall be reported as an out of tolerance activity within one week of the end of the tolerance period.

2.5.2 Service schedules

At the applicable routine service frequency and tolerance interval, the designated emergency lighting or exit sign system shall be subjected to the schedules shown in Appendix A.

The routine service and maintenance activities of self-contained emergency luminaire and exit sign systems and centrally supplied systems shall be carried out in accordance with the activities set out in Tables A1 to A6 of Appendix A, as applicable. Figure 1 is a flow chart of routine service and maintenance for the six monthly, yearly and ten yearly service schedules. The left side refers to single point (self contained) and the right side refers to central battery systems.

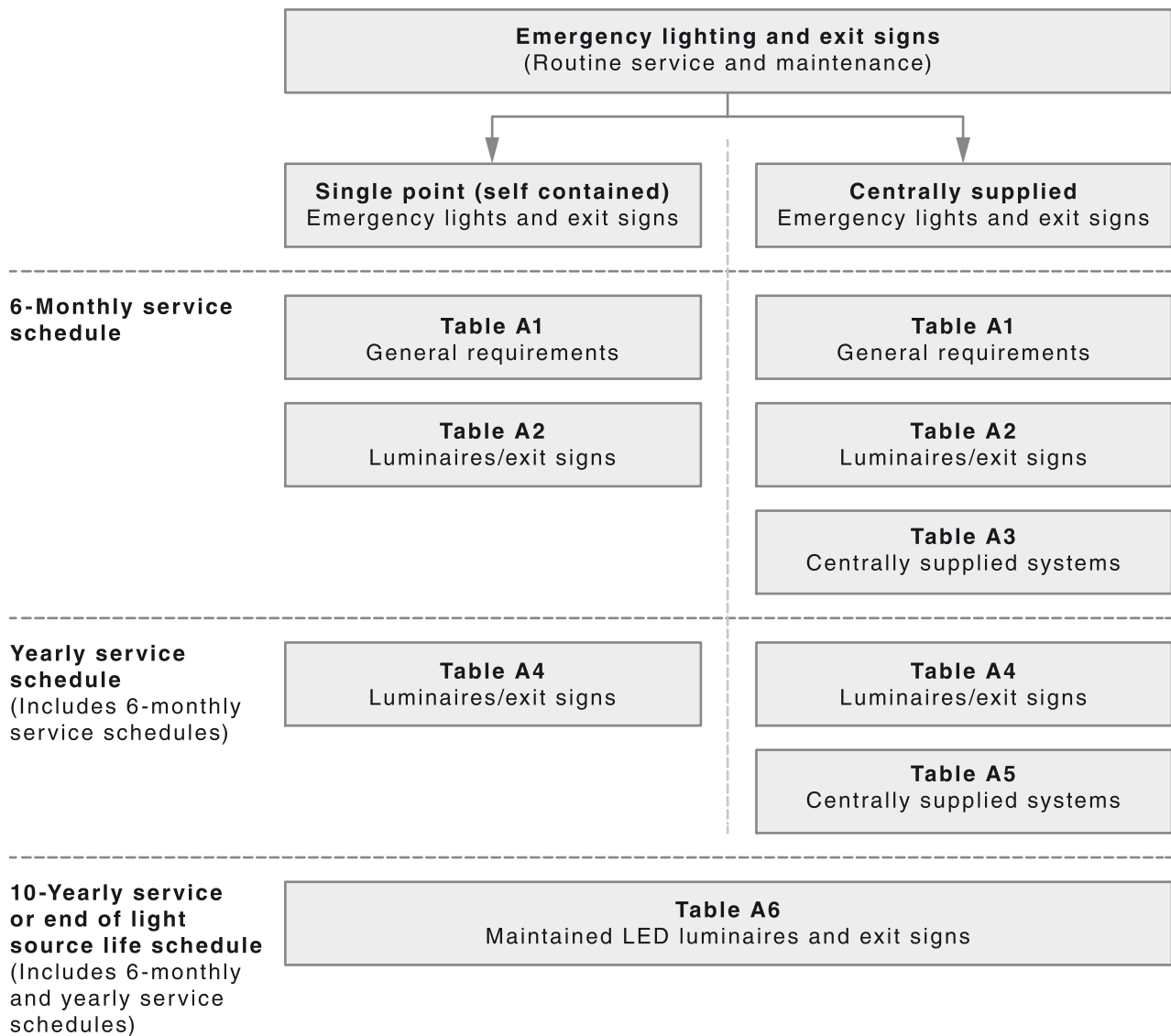


FIGURE 1 ROUTINE SERVICE AND MAINTENANCE SUMMARY FLOWCHART