

Australian/New Zealand Standard™

**Emergency lighting and exit signs for
buildings**

**Part 1: System design, installation and
operation**



AS/NZS 2293.1:2018

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 5 June 2018 and by the New Zealand Standards Approval Board on 3 April 2018.
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Australian Industry Group
Business New Zealand
Electrical Trades Union
Employers Chamber of Commerce Central
Engineers Australia
Fire Protection Association Australia
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Australian/New Zealand Standard™

Emergency lighting and exit signs for buildings

Part 1: System design, installation and operation

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee LG-007, Emergency Lighting in Buildings, to supersede AS 2293.1—2005, *Emergency escape lighting and exit signs for buildings, Part 1: System design, installation and operation*.

The AS/NZS 2293 series comprises three Parts as follows:

AS/NZS

- 2293 Emergency lighting and exit signs for buildings
- 2293.1 Part 1: System design, installation and operation (this Standard)
- 2293.2 Part 2: Inspection and maintenance
- 2293.3 Part 3: Emergency luminaires and exit signs*

The objective of the AS/NZS 2293 series of Standards is to provide those associated with the design, construction, installation, certification and maintenance of all the individual components of an emergency lighting and exit signage scheme, and the scheme as a whole, with the requirements and guidelines to provide an installation that will ensure an acceptable level of illumination to the nominated areas for the safe evacuation of occupants from those areas in an emergency situation.

The objective of this Standard is to provide designers, installers and certifiers of emergency lighting and exit signage schemes with the relevant requirements and guidance for the provision of emergency lighting and exit signs to all designated spaces within a building in order to ensure an acceptable level of illumination for the safe evacuation of occupants from those spaces in an emergency situation.

The principal reason for this edition of the Standard is to specify updated installation requirements and adapt the Standard to current technologies, terminologies and delete out of date references or methods. Many of the section headings have been re-worded to better reflect their application and the sections re-ordered to assist in the reading of the document. Spacing tables have been moved to a normative appendix.

To assist with the application of this Standard, definitions have also been included for the following:

- (a) Exit signs—Four types defined.
- (b) High risk task area lighting.
- (c) Light source(s).
- (d) Remote self-contained emergency luminaire or exit sign.
- (e) Stand-by lighting.

Further to these items some other definitions have been revised to support these new definitions or to clarify previous ambiguities.

The terminology now used recognizes the term ‘emergency lighting’ as including four categories of lighting, each provided with an alternative energy supply, as follows:

- (i) Emergency evacuation and emergency escape lighting.
- (ii) Illuminated emergency exit signs.
- (iii) High risk task area lighting.
- (iv) Stand-by lighting.

Of these categories, Items (i) and (ii) refer to the two types of emergency lighting that are required by the deemed-to-satisfy provisions of the NCC and New Zealand Building Code and comprise the scope of the AS/NZS 2293 series of Standards. Items (iii) and (iv) are not covered by this series of Standards. However, definitions for these types of lighting have been added to this edition of the Standard.

Some clauses have been moved to assist reading and application of the Standard. For example, the clauses titled 'Avoidance of obstruction of light', 'Avoidance of glare' and 'Protection against unauthorized removal of lamps' have been moved into a 'General' clause in Section 4, which deals with installation requirements for emergency luminaires. The clause specifying the illumination requirements has been moved to Clause 4.2, titled 'Provision of emergency luminaires' rather than within the specific clauses dealing with illuminance calculations.

Clause 2.3.3, dealing with sensing of supply failure, has been simplified and the methodologies aligned for both central battery and single point emergency lighting systems.

AS/NZS 2293.3 requires an emergency luminaire to be classified according to its ability to achieve a luminous intensity up to a 70 degree cut off angle for Classification A-D (65 degrees for Classifications E). The calculations for the classification currently do not assess the contribution of luminance beyond this 70 degree geometric limit. AS 2293.1 contains spacing tables for common mounting heights for emergency luminaires based on their classification (derived from AS/NZS 2293.3) to achieve the current minimum at floor level. However, having regard only for the light assessed under the 70 degree geometric limitation used for the purpose of classifying the luminaire, calculations reveal the previous edition's spacing tables allow configurations that would result in the current minimum not being achieved. Further, with changing technology, unlike fluorescent and incandescent types typical of the available light sources at the time of publication of previous editions of this Standard, some luminaires including modern LEDs do not produce light beyond their assessed geometric limitation and therefore may not achieve a the current minimum at all points on the floor.

This edition contains a set of revised classification tables to reflect maximum spacing that does not exceed geometric limitations of 70 degrees for all Class A-D luminaires and 65 degrees for Class E luminaires assessed under AS/NZS 2293.3. Two sets of tables are contained within Appendix E and F. Appendix E contains tables based on 0.2lx minimum between emergency luminaires and Appendix F contains tables based on 1lx minimum between luminaires. It also includes, in the calculation method, a requirement to achieve a 'minimum average' of 0.5 lx in addition to the current minimum.

The use of spacing tables for stairwells has been revised and simplified. Rather than modifying spacings using a set of rules, to achieve the higher illumination levels required in stairs, and spacing tables based around 0.2lx minimum, emergency luminaires are selected using the conventional spacing table approach based on the new spacing tables in Appendix F based on 1lx minimum.

This edition of the Standard requires that emergency luminaires and exits signs are visibly labelled and previous inconsistencies between the information required for maintaining the system and references to requirements prescribed in AS/NZS 2293.2 have been identified and corrected.

Provisions and requirements for centrally supplied systems have been simplified and upgraded. Within buildings required to be constructed of fire-resisting elements there are no longer separate provisions for buildings supplied with automatic sprinkler systems compared to buildings without. The class of cable protection has been standardized to be WS4X protection and the fuse type within terminal boxes has been widened to include fuses of a higher grade than type gG making it easier the match the fuse with a ceramic fuse holder, as required in the Standard.

Committee LG-007 will continue to investigate new techniques, new or developing energy sources and illuminants, new approaches such as wayfinding systems and also the effects of smoke on emergency lighting, for possible inclusion in future editions of the AS/NZS 2293 series.

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 distinguishes between documents cited as normative references and those referenced for information only. Those belonging to the former category are cited in the clause titled 'Normative references', and are listed in Appendix A, while those for information only are listed in the Bibliography.

In New Zealand, the New Zealand Building Code takes precedence over this Standard but cites the Standard in Acceptable Solutions F6/AS1 and F8/AS1 as a means of compliance with the requirements of the New Zealand Building Code, clauses F6, Visibility in Escape Routes, and F8, Signs.

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Emergency lighting and exit signs for buildings

Part 1: System design, installation and operation

SECTION 1 SCOPE AND GENERAL**1.1 SCOPE**

This Standard specifies requirements for the design and installation of emergency lighting and illuminated emergency exit signage systems for buildings. Central battery, single point and self-contained systems are included.

The scope of this Standard does not include the following:

- (a) Constructional (including appearance) requirements for emergency luminaires and exit signs.

NOTE: These requirements can be found in AS/NZS 2293.3.

- (b) Requirements for maintaining an emergency lighting installation once installed.

NOTE: These requirements can be found in AS/NZS 2293.2.

- (c) Specification of the types of buildings or particular spaces that are required to be provided with emergency lighting.

NOTE: For Australia this is set out in the NCC.

- (d) Requirements for emergency lighting of the interior of lift cars.

NOTE: For Australia these requirements can be found in the NCC. The NCC contains deemed-to-satisfy provisions for lift car emergency lighting.

- (e) Requirements for high-risk task area lighting.

- (f) Requirements for stand-by lighting.

- (g) Requirements for emergency lighting on construction sites.

NOTE: These requirements can be found in AS/NZS 3012.

- (h) Requirements for emergency lighting in vehicular sections of roadway tunnels.

NOTE: These requirements can be found in AS/NZS 1158.5 and further guidelines are published by Austroads, the association of Australasian road transport and traffic agencies.

- (i) Requirements for rail tunnels, rail yards, concourse and platforms

NOTE: These requirements are specified by the relevant rail authority.

1.2 OBJECTIVE

The objective of this Standard is to provide designers, installers, manufacturers and consumers with the installation requirements for emergency lighting equipment and associated systems. Part 1 provides the requirements and specifications which are applicable to installations, where emergency luminaires and exit signs are used.

1.3 APPLICATION

This Standard becomes applicable upon publication.