AS/NZS 2293.1:1995

Australian/New Zealand Standard

Emergency evacuation lighting for buildings

Part 1: System design, installation and operation

STANDARDS AUSTRALIA
STANDARDS NEW ZEALAND

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee LG/7, Emergency Lighting in Buildings. It was approved on behalf of the Council of Standards Australia on 31 May 1995 and on behalf of the Council of Standards New Zealand on 29 May 1995. It was published on 5 September 1995.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee LG/7, Emergency Lighting in Buildings, to supersede, in part, AS 2293.1—1987* and, in part, NZS 6742:1971†.

The Standard sets out requirements for the design, installation and operation of emergency evacuation lighting systems for buildings. The objective of these requirements is to ensure the provision of visual conditions that will alleviate panic and facilitate safe evacuation of the building occupants should this be necessary in the event of failure of the normal lighting.

Attention is drawn to the need for emergency evacuation lighting systems to be regularly maintained. In this regard it should be noted that AS/NZS 2293.2‡ specifies the periodic inspection and maintenance checks which should be carried out to ensure that emergency evacuation lighting systems will continue to function effectively.

The following significant changes have been made in this edition of the Standard:

(a) The Standard has been restructured as a consequence of the transfer of requirements for emergency luminaires and exit signs to a separate Standard (see AS/NZS 2293.3‡).

(b) Requirements relating to the sensing of supply failure and control of the operation of emergency lighting have been revised (see Clause 2.4.2).

(c) Provision has been made for the option of installing an automatic cut-off device to protect batteries of central systems from damage due to excessively low voltage (see Clause 3.4.6).

(d) A requirement has been included for all emergency lighting systems to incorporate facilities for discharge testing which do not necessitate interruption of the supply to the normal lighting. Such facilities may be either manual or automatic and appropriate requirements are specified for both forms of test facility (see Section 4).

(e) Allowance is made for the spacings of emergency luminaires to be determined from illuminance calculations, subject to specified conditions, as an alternative to the luminaire spacing rules (i.e. tabulated maximum spacings) that applied previously in AS 2293.1—1987*. See further information below and Clause 5.3.2.

(f) The maximum luminaire spacings for all classes of emergency luminaire have been recalculated and the resulting values rounded-off in a more consistent manner (see Tables 5.1 to 5.5).

For direct lighting systems, two alternative methods are specified for deriving the required spacings for emergency luminaires, viz.

(i) A set of rules involving the classification of emergency luminaires according to their light output distribution (see AS/NZS 2293.3‡) coupled with requirements relating the luminaire mounting height and maximum spacing (see Clauses 5.3.2.2 and 5.3.2.3, and Tables 5.1 to 5.5).

(ii) Calculations of the illuminance at floor level conducted in a specified manner (see Clause 5.3.2.4).

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* AS 2293.1—1987 Emergency evacuation lighting in buildings, Part 1: Design and installation

† NZS 6742:1971 Code of practice for emergency lighting in buildings

‡ AS/NZS
2293 Emergency evacuation lighting for buildings
2293.2 Part 2: Inspection and maintenance
2293.3 Part 3: Emergency luminaires and exit signs

There are differences in the way in which the methods described in Items (i) and (ii) are specified for separate application in Australia and New Zealand, as explained below.

For Australian purposes, the spacing rules remain essentially unchanged from those previously specified in AS 2293.1—1987. For illuminance calculations, only the luminous flux that reaches the floor directly from the emergency luminaires is taken into account.

For New Zealand purposes, similar spacing rules apply to those for use in Australia excepting that a separate luminaire classification is calculated for each room or space which is to be provided with emergency lighting. For illuminance calculations, the luminous flux that reaches the floor both directly and indirectly (by reflection from room surfaces) is taken into account.

The above differences arise in part from different regulatory positions in Australia and New Zealand. In particular, the different requirements arise from the following:

(A) *In New Zealand* The underlying basis for the requirements is the provision of an illuminance of not less than 1 lx at any point, as required by the New Zealand Building Code. Both the direct and inter-reflected luminous flux components are taken into account.

(B) *In Australia* The underlying basis for the requirements is the provision of an illuminance not less than 0.2 lx at the mid-point between adjacent luminaires. Only the direct component of luminous flux is taken into account.

The differences between the New Zealand and Australian positions are, in practice, not as large as they appear. For a number of practical reasons, emergency lighting systems designed in accordance with the Australian spacing rules (i.e. Tables 5.1 to 5.5) have, by measurement, been observed to provide illuminances comparable to those required by the New Zealand Building Code.

Differences also exist with respect to the installation of exit signs. For Australia, the requirements of Clause 5.6 apply which are similar to those of AS 2293.1—1987 but with some changes. For New Zealand, Clause 5.7 requires compliance with Approved Document F8 of the New Zealand Building Code.

The abovementioned differences will be given further attention in a future revision of the Standard, having regard to any developments with respect to international recommendations covering this subject.

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.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.