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# Australian Standard 2293, Part 2-1979

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## EMERGENCY EVACUATION LIGHTING IN BUILDINGS

## Part 2—MAINTENANCE PROCEDURES

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**STANDARDS ASSOCIATION OF AUSTRALIA**

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Association of Consulting Engineers Australia  
Australian Electrical and Electronic Manufacturers Association  
Building Owners and Managers Association of Australia Limited  
Confederation of Australian Industry  
Department of Housing and Construction  
Department of Productivity  
Electricity Supply Association of Australia  
Illuminating Engineering Societies of Australia  
Insurance Council of Australia  
State Fire Authorities

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**AUSTRALIAN STANDARD**

**EMERGENCY EVACUATION LIGHTING  
IN BUILDINGS**

**Part 2  
MAINTENANCE PROCEDURES**

**AS 2293, Part 2—1979**

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## PREFACE

This standard was prepared by the Association's Committee on Emergency Lighting in Buildings. It is the second part of a 2-part standard.

Whereas AS 2293, Part 1 prescribes requirements for the equipment used and practices adopted in the installation of emergency evacuation lighting in buildings, this standard specifies the periodic inspection and maintenance checks which should be carried out to ensure that the emergency evacuation lighting installation will continue to function effectively.

This standard requires reference to the following Australian standards:

- AS 1042      Direct-acting Indicating Electrical Measuring Instruments and Their Accessories
- AS 1680      Code of Practice for Interior Lighting and the Visual Environment
- AS 2293      Emergency Evacuation Lighting in Buildings  
Part 1—Installation Requirements
- AS C59        Water for Use in Secondary Batteries of the Enclosed Cell Type

## CONTENTS

	<i>Page</i>
<b>SECTION 1. SCOPE, DEFINITIONS AND GENERAL REQUIREMENTS</b>	
1.1 Scope ....	3
1.2 Definitions ....	3
1.3 General Requirements....	3
<b>SECTION 2. MAINTENANCE PROCEDURES FOR CENTRAL SYSTEMS</b>	
2.1 Six-monthly Procedures ....	4
2.2 Twelve-monthly Procedures ....	4
<b>SECTION 3. MAINTENANCE PROCEDURES FOR SINGLE-POINT SYSTEMS</b>	
3.1 Maintenance and Testing ....	6
3.2 Battery Replacement ....	6
<b>APPENDIX</b>	
A Guide for the Maintenance of Batteries and Battery Chargers....	7

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**STANDARDS ASSOCIATION OF AUSTRALIA**

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**— Australian Standard  
for  
EMERGENCY EVACUATION LIGHTING IN BUILDINGS**

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**PART 2—MAINTENANCE PROCEDURES**

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**SECTION 1. SCOPE, DEFINITIONS AND GENERAL  
REQUIREMENTS**

**1.1 SCOPE.** This standard lays down the periodic inspection and maintenance checks which shall be carried out to ensure that emergency evacuation lighting systems, installed in accordance with AS 2293, Part 1, will be in a state of readiness for operation at all times.

**NOTE:** Clause 6.1 of AS 2293, Part 1 requires the provision of an operating and maintenance manual to assist in conducting the inspection and maintenance checks required by this standard. Clause 6.2 of AS 2293, Part 1 requires the provision of a log-book for the recording of all work undertaken.

**1.2 DEFINITIONS.** For the purpose of this standard, the definitions given in AS 2293, Part 1 apply.

**1.3 GENERAL REQUIREMENTS.**

**1.3.1 Maintenance of the Installation.** The emergency evacuation lighting system shall be maintained in accordance with the relevant procedures prescribed in this standard. Maintenance shall be carried out only by persons authorized to do so by the Inspecting Authority, and having qualifications and experience suitable for the work on which they are engaged.

**1.3.2 Maintenance Records.** All work carried out in accordance with this standard shall be recorded in the log-book provided in accordance with Clause 6.2 of AS 2293, Part 1. Entries shall be made by the authorized person (see Clause 1.3.1) and shall be dated and signed.

## SECTION 2. MAINTENANCE PROCEDURES FOR CENTRAL SYSTEMS

### 2.1 SIX-MONTHLY PROCEDURES.

**2.1.1 General.** The procedures prescribed in Clauses 2.1.2 to 2.1.6 inclusive shall be carried out at intervals of not greater than 6 months.

#### 2.1.2 Batteries.

**2.1.2.1 Lead-acid batteries only.** For lead-acid batteries, at least 10 percent of the total number of cells in the battery shall be randomly selected and the following information shall be recorded in the log-book; the cells selected shall be used for all subsequent six-monthly maintenance checks:

- (a) Electrolyte density.
- (b) State of charge of each cell, determined from the measured electrolyte density and the data provided in the operating and maintenance manual.

For the purpose of recording the above information, cell numbers shall be designated in sequence, commencing from the positive end of the battery.

**NOTE:** Measurements on the limited number of cells serve to monitor general trends in the performance of the battery between the 12-monthly checks on all cells required by Clause 2.2.2.

**2.1.2.2 All types of batteries (including lead-acid batteries).** For all types of batteries, including lead-acid batteries, the following checks shall be made:

- (a) Check the electrolyte level in each cell and top up those cells which are markedly lower than the general level with water complying with AS C59. Record in the log-book any cells which require topping-up. Checking of the electrolyte level and topping-up, if necessary, shall be carried out before the battery is boost charged (if this is required).

**NOTE:** During boost charging, the electrolyte level rises owing to release of gas and increase in temperature. Consequently, a false level would be indicated if the check is made within a period of 1 h following a boost charge.

- (b) Inspect all cell containers for electrolyte leakage. Mop up any spilt liquid and neutralize as necessary.

**2.1.3 Battery Chargers.** The following checks shall be made on battery chargers:

- (a) Visually inspect all components for signs of malfunction. Pay particular attention to indicating lamps, relays and contactors.
- (b) Remove any dust or dirt that may have accumulated within the cubicle.
- (c) Check that the battery is operating within the normal float voltage limits marked on the scale of the d.c. voltmeter provided on the battery charger. Record the reading in the log-book.
- (d) Check all connections for tightness.

**2.1.4 Inverters.** The following checks shall be made on inverters:

- (a) Visually inspect components for signs of malfunction.

- (b) Note d.c. input voltage and current, and record in the log-book. Check against data in the operating and maintenance manual to ensure that it is within the tolerance limits of the inverter.

- (c) Note a.c. output voltage and current, and record in the log-book. Check against data in the operating and maintenance manual to ensure that it is within the output tolerances given for the inverter.

**2.1.5 Distribution and Control Equipment.** The following checks shall be made on distribution and control equipment:

- (a) Visually inspect relays, contactors, circuit-breakers and fuses for signs of malfunction.
- (b) Check all connections for tightness.
- (c) Remove any dust or dirt that may have accumulated within distribution and control equipment enclosures.
- (d) Isolate the coil circuit of all sensing relays or contactors from the a.c. supply and observe correct operation to bring on the emergency lighting.

**NOTE:** This may be done in conjunction with the test discharge required by Clause 2.1.7(a).

**2.1.6 Luminaires.** All emergency luminaires and exit signs shall be checked to ensure that they function satisfactorily. Any defective lamps shall be replaced.

**NOTE:** This may be done in conjunction with the test discharge required by Clause 2.1.7(a).

**2.1.7 System Check.** The following procedure shall be carried out to check the operation of the emergency lighting system:

- (a) Turn the battery charger off and carry out a partial test discharge at 100 percent of the installed emergency load. Allow the test to continue until the operation of all emergency luminaires has been checked, as required by Clause 2.1.6.

During the test discharge, check that the charger failure alarm operates satisfactorily.

- (b) Disconnect the load, turn the battery charger on and recharge the battery.

### 2.2 TWELVE-MONTHLY PROCEDURES.

**2.2.1 General.** The procedures prescribed in Clauses 2.2.2 to 2.2.6 inclusive shall be carried out at intervals of not greater than 12 months.

#### 2.2.2 Batteries.

**2.2.2.1 Lead-acid batteries only.** For lead-acid batteries, the following information shall be recorded in the log-book for each cell in the battery:

- (a) Electrolyte density.
- (b) State of charge determined from the measured electrolyte density and the data provided in the operating and maintenance manual.