

Australian/New Zealand Standard™

Electrical installations—Patient areas



AS/NZS 3003:2011

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Australian/New Zealand Standard™

Electrical installations—Patient areas

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee HT-021, Wiring of Medical Treatment Areas in Hospitals to supersede AS/NZS 3003:2003, *Electrical installations—Patient treatment areas of hospital, medical dental and practices and dialyzing locations*.

This Standard incorporates Amendment No. 1 (February 2015). 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.

The purpose of this Standard is to specify special requirements for electrical installations in patient areas. These requirements are additional to those specified in AS/NZS 3000 and the New Zealand Electricity Regulations.

Advice on whether particular patient areas should be wired as body-protected or cardiac-protected electrical areas is set out in AS/NZS 2500, *Guide to the safe use of electricity in patient care*. The governing body or proprietor of the health care facility should refer to the safe practice code in AS/NZS 2500 for advice on how these decisions should be based on the type of procedures undertaken in each area and the level of protection afforded in the medical electrical equipment available for these procedures.

This Standard is intended to apply only to installations (or alterations or additions) made or carried out after the date this Standard is published. However, it is strongly recommended that hospital management carefully evaluate the procedures undertaken within existing installations and take steps to implement the appropriate electrical safety requirements specified herein for areas that are used for cardiac-type procedures or for procedures involving the regular use of medical electrical equipment.

While this Standard is intended to apply to new installations or extensions, some guidance is given concerning conversion of older installations.

Any requirements that may be applicable only in Australia or New Zealand are indicated by the symbol **A** or **NZ** in the margin.

The terms ‘normative’ and ‘informative’ are 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.

Major changes in the 2011 edition include the following:

- After each clause there is now a section (in italics) that specifies how compliance to the clause is validated.
- In order to minimize the over specification of wiring for cardiac-protected areas, Clauses 2.2.2.1 and 2.2.3 now mandate the level of electrical protection required in specific patient areas. Failing to meet these requirements will result in non-compliance.
- Final sub-circuits are now permitted to supply only one room and its adjoining ensuite in body-protected electrical areas.
- Socket-outlets that must be protected by LPDs now include the common IEC type connectors.
- Final sub-circuits are permitted to supply only one patient location in cardiac-protected electrical areas.
- Socket-outlets marked for cleaning purposes may not be supplied from any sub-circuits supplying socket-outlets in body-protected or cardiac-protected electrical areas.

- Socket-outlets (Clause 2.4.3.2 and 4.4.2.4.1) within 5000 mm of the entrance to body-protected or cardiac-protected electrical area are to be protected by LPDs and connected to the equipotential earthing system.
- A UPS status indicator (Clause 2.4.5.2) is required where socket-outlets are connected to a UPS supply.
- RCDs are required to be readily accessible.
- Socket-outlets that are not readily accessible require a separate readily accessible isolating switch.
- Socket-outlets marked for cleaning purposes are required to be located within 15 000 mm of any point within a patient area. The need for a socket-outlets marked for cleaning purposes to be located within a patient area has been removed.
- The marking of socket-outlets has been specified.
- The testing requirements for RCDs have been specified.
- The testing requirements for isolated supplies has been specified.
- Commissioning and certification of body-protected or cardiac-protected electrical areas has been specified. The documentation required to certify areas has been detailed.
- The need for EP terminals has been removed.
- The methodology of earthing in cardiac-protected electrical areas has altered to allow the use of nodes.
- Detailed drawings have been added to show the correct methodology of earthing of socket-outlets.
- A new section on special patient areas has been added covering home care installations and, in particular, self harm areas.
- A new Section 6 covering alterations, additions and repairs to electrical installation in patient area has been added. It requires that the patient area must have a current routine inspection before alterations, additions and repairs can start.
- Magnetic fields are recognized as having an important effect on some diagnostic procedures and therefore requirements have been added to test the level of magnetic fields in certain areas.
- The marking of patient area is more detailed.
- Section 9 detailing routine inspection has been added.

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out requirements for new electrical installations and for alterations, additions and repairs of existing electrical installations in patient areas.

Areas other than patient areas are not covered by this Standard, but are covered by the relevant requirements of AS/NZS 3000.

This Standard nominates specific maximum values of electromagnetic interference. This matter needs careful consideration at the design stage. In some patient areas, these values need to be measured.

This Standard specifies the patient area classification for certain locations.

NOTES:

- 1 Where a patient area is not listed in this Standard, refer to AS/NZS 2500 for guidance. AS/NZS 2500 outlines the procedure for determining where cardiac-protected electrical areas are required. These decisions are made by the governing body or proprietor of the health care facility, based on the classification of the medical procedures undertaken in each area and the protection against electric shock provided in the medical electrical equipment available for these procedures.
- 2 Requirements for mobile trolleys supporting electrical equipment are given in AS/NZS 3551.
- 3 Requirements for emergency lighting are given in AS/NZS 2293.1.
- 4 Requirements for emergency power systems in hospitals are given in AS/NZS 3009.
- 5 In New Zealand, mobile medical connectable installations must comply with the requirements of this Standard and NZS 6115.

1.2 APPLICATION

Electrical installations in patient areas shall be carried out in accordance with AS/NZS 3000 and additionally, for NZ, with the Electricity Regulations in New Zealand, as varied by this Standard.

This Standard applies to installations, alterations, additions and repairs carried out after the date of its publication.

NOTE: See Section 6 for alterations to equipotential earthing in existing installations.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS

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|--------|---|
| 1319 | Safety signs for the occupational environment |
| 3011 | Electrical installations—Secondary batteries installed in buildings |
| 3011.1 | Part 1: Vented cells |
| 3011.2 | Part 2: Sealed cells |