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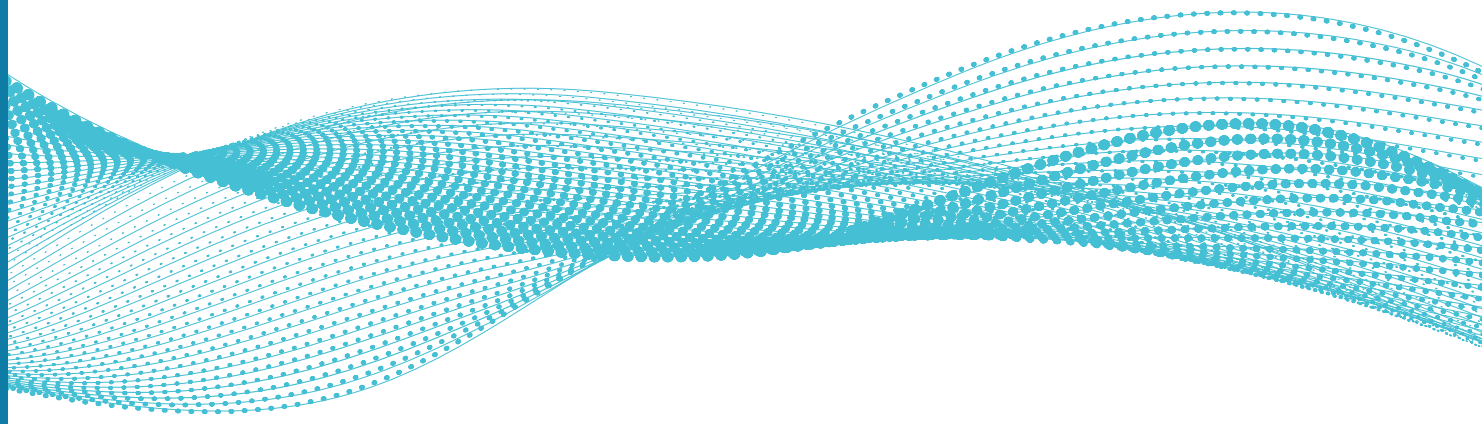
AS/NZS 3001.1:2022

AUSTRALIAN/NEW ZEALAND STANDARD

Electrical installations – Connectable electrical installations and supply arrangements

Part 1: Site supplies for connectable electrical installations

Superseding, in part, AS/NZS 3001:2008



AS/NZS 3001.1:2022

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This joint Australian/New Zealand standard was prepared by Joint Technical Committee EL-001, Wiring Rules. It was approved on behalf of the Council of Standards Australia on 1 November 2022 and by the New Zealand Standards Approval Board on 5 October 2022.

This standard was published on 18 November 2022.

The following are represented on Committee EL-001:

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Consumers' Federation of Australia
Electrical Regulatory Authorities Council
Electrical Safety New Zealand
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Australian/New Zealand Standard

Electrical installations – Connectable electrical installations and supply arrangements

Part 1: Site supplies for connectable electrical installations

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Originated in Australia as part of AS 3001—1959 and AS 3005—1982.
Originated in New Zealand as part of AS/NZS 3001:2001.
Previous edition part of AS/NZS 3001:2008.
Jointly revised in part and redesignated as AS/NZS 3001.1:2022.

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Jointly published by Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, PO Box 1473, Wellington 6140.

ISBN (Print) 978-1-77691-564-4
ISBN (PDF) 978-1-77691-565-1

Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-001, Wiring Rules, to supersede part of AS/NZS 3001:2008, *Electrical installations—Transportable structures and vehicles including their site supplies*.

The objective of this Standard is to update the requirements for electrical installations that provide site supply to relocatable structures or premises, recreational vehicles and non-recreational vehicles (known as connectable electrical installations).

This Standard may be applied through legislative requirements, as indicated in Clause 1.2. This Standard supersedes AS/NZS 3001:2008 from its date of publication for the requirements covered in this Standard. This may not be practicable in some cases and a transition period, for example of 12 months, may need to be arranged. For example, where work on an installation was commenced before publication of this edition, the relevant regulatory authority should be consulted regarding permission for the installation to be completed in accordance with AS/NZS 3001:2008.

This Standard forms Part 1 of the AS/NZS 3001 series as follows:

AS/NZS 3001.1, *Electrical installations — Connectable electrical installations and supply arrangements, Part 1: Site supplies for connectable electrical installations* (this Standard)

AS/NZS 3001.2, *Electrical installations — Connectable electrical installations and supply arrangements, Part 2: Connectable electrical installations*

The major changes in this edition are as follows:

(a) AS/NZS 3001 has been divided into two parts. Part 1 specifies requirements for site supplies for connectable electrical installations.

(b) Alterations and repairs for site supplies have been included.

(c) Section 2 encompasses site supplies at caravan parks and camping grounds.

(d) Section 3 encompasses site supplies at locations other than at caravan parks or camping grounds.

(e) Section 4 encompasses testing and inspection requirements.

(f) Additional requirements have been set out for the use of common submains to supply multiple service pillars, including by ring circuit.

(g) New figures have been included and existing figures updated.

(h) Appendix A has been updated to reflect increased supply requirements for new installations.

Differences between requirements in Australia and New Zealand are as follows:

In Australia, round-pin plugs and socket-outlets complying with AS/NZS 3123 may be used, however flat-pin type connections are the type most commonly used for single-phase supply to connectable electrical installations. AS

In New Zealand, the following apply: NZ

(i) A diminishing number of recreational vehicles (RVs), e.g. caravans, are fitted with a neutral-earth connection. This precludes providing residual current device (RCD) protection to the caravan by the installation of RCDs on the supply side of the neutral-earth connection.

(ii) Since publication of the 2008 edition, all new site supplies have been required to have RCD protection. That requirement continues in this edition.

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(iii) Many caravan parks and camping grounds have a mixture of new service pillars with RCD protection and old service pillars without. The location of connectable electrical installations with a neutral-earth connection is regarded as a site management issue.

(iv) In the case of caravan parks and camping grounds that only have pillars with RCD protection, connectable electrical installations with a neutral-earth connection will not be able to obtain a supply due to incompatibility.

(v) It is intended that, over time, older service pillars without RCD protection will be upgraded to include it. The benchmarks in Appendix C for periodic assessment of caravan parks and camping grounds have been revised to reflect this intent.

(vi) It is typical for the plug on the supply lead for recreational vehicles, and hence for all socket-outlets intended to provide electrical power to such connectable electrical installations, to comply with IEC 60309-2.

(vii) This Standard continues to permit socket-outlets complying with AS/NZS 3112 to be installed in caravan parks and camping grounds.

(viii) The requirements for earthing of service pillars have been amended in this edition; with each new pillar being required to have a supplementary earth electrode in addition to the protective earthing conductor of the submain supplying the pillar.

(ix) Appendix C has been revised to better reflect the intent of the periodic assessment required by New Zealand regulations.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

See Introduction for information on how to interpret and use this Standard.

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Introduction

Application of typefaces

Four different typefaces are used in this Standard. Each of these has a specific purpose as follows:

(a) Normal print indicates requirements that form the main part of a clause. It also indicates "deemed to comply" methods that satisfy the requirements. Normal print is used in the appendices to present informative material for guidance only.

(b) *Italic print indicates exceptions or variations to requirements.*

Exceptions generally give specific examples where the requirements do not apply or where they are varied for certain applications. They may contain requirements. Examples are also presented in italic text.

(c) Reduced size normal print indicates Notes which give explanations and advice.

NOTE They are preceded by "NOTE" in the manner used in previous editions.

(d) **Bold print indicates WARNINGS**.

It is important not to read text in any single typeface without consulting the preceding or following paragraphs, which may contain additional or modifying requirements.

National requirements

Certain provisions of the Standard have a different application in Australia and New Zealand. The following symbols appearing in the outer margin indicate that the identified Section or Clause is:

(i) Applicable in Australia only. AS

(ii) Applicable in New Zealand only. NZ

Deemed to comply

The term "deemed to comply" means that a requirement can be met by following a specified Standard or method.

So, where an installation is carried out in accordance with the specified Standard or method, the installation is "deemed to comply" with the requirements of this Standard.

Conformance to a deemed to comply Standard may exceed the minimum requirements of this Standard.

Notes

Notes to clauses are informative and give explanations or advice. They do not form a mandatory part of this Standard.

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Cross-references

Where reference to another clause has been made, such reference, unless otherwise stated, includes all appropriate subclauses and paragraphs of the clause or portion thereof referred to.

Provision for revision

This Standard is not intended to discourage invention or to exclude materials, equipment and methods that may be developed. Revisions will be made from time to time in view of such developments and Amendments to this edition will be made where essential.

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Australian/New Zealand Standard

Electrical installations — Connectable electrical installations and supply arrangements

Part 1: Site supplies for connectable electrical installations

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Section 1 Scope and general

1.1 Scope

1.1.1 General

This Standard sets out the requirements for electrical installations associated with site supplies for connectable electrical installations that are intended for connection to low voltage (LV) a.c. supply systems (i.e. exceeding 50 V a.c. but not exceeding 1 000 V a.c.).

The particular requirements of this Standard replace, modify, or are additional to the general requirements of AS/NZS 3000 for the electrical wiring of site supplies for connectable electrical installations.

NOTE 1 Guidance on the calculation of maximum demand for switchboards/service pillars is provided in Appendix A.

NOTE 2 See Appendix B for guidance on providing connection instructions to patrons.

1.1.2 Inclusions

Site supplies may exist in the following:

(a) Caravan parks.

(b) Holiday parks.

(c) Tourist parks.

(d) Camping grounds.

(e) Socket-outlets of other electrical installations specifically provided for the connection of connectable electrical installations, including but not limited to:

  (i) Public areas.

  (ii) Shows and carnivals.

  (iii) Golf courses.

  (iv) Sporting grounds.

  (v) Horse racing grounds.

  (vi) Accommodation provider sites (e.g. hotels, motels, bed and breakfast).

(f) This Standard may also be used for scouting jamborees, military camps or civil defence shelters in conjunction with AS/NZS 3002.

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1.1.3 Exclusions

In Australia, this Standard does not apply to fixed electrical installations forming part of the following: AS

(a) electrical installations as per AS/NZS 3000;

(b) shows and carnival installations as per AS/NZS 3002;

(c) construction and demolition installations as per AS/NZS 3012;

(d) marina installations as per AS/NZS 3004.1; or

(e) parts of other installations not intended to supply electricity to a connectable electrical installation.

In New Zealand, this Standard does not apply to the following: NZ

(i) marina installations; or

(ii) parts of other installations not intended for use to supply electricity to a connectable electrical installation.

1.2 Application

This Standard may be applied through legislative requirements, made in each state and territory of Australia and in New Zealand, concerned with the safety of electrical installations. This Standard may also be applied in conjunction with any additional requirements, exemptions or restrictions in such legislation.

1.3 Normative references

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

NOTE Documents referenced for informative purposes are listed in the Bibliography

AS 4702, *Polymeric cable protection covers*

AS 60529, *Degrees of protection provided by enclosures (IP Code)*

AS/NZS 2648.1, *Underground marking tape, Part 1: Non-detectable tape*

AS/NZS 3000, *Electrical installations (known as the Australian/New Zealand Wiring Rules)*

AS/NZS 3010, *Electrical installations—Generating sets*

AS/NZS 3017, *Electrical installations — Verification by inspection and testing*

AS/NZS 3019, *Electrical installations — Periodic assessment*

AS/NZS 3112, *Approval and test specification—Plugs and socket-outlets*

AS/NZS 3123, *Approval and test specification—Plugs, socket-outlets and couplers for general industrial application*

AS/NZS 4509, *Stand-alone power systems (all parts)*

AS/NZS 4763, *Safety of portable inverters*

AS/NZS 4777, *Grid connection of energy systems via inverters (all parts)*

AS/NZS 5033, *Installation and safety requirements for photovoltaic (PV) arrays*

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AS/NZS 5139, *Electrical installations — Safety of battery systems for use with power conversion equipment*

AS/NZS 61008.1, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs), Part 1: General rules (IEC 61008-1, Ed. 3.2 (2013) MOD)*

AS/NZS 61009.1, *Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs), Part 1: General rules (IEC 61009-1, Ed. 3.2 (2013) MOD)*

IEC 60309-2, *Plugs, socket-outlets and couplers for industrial purposes — Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories*

1.4 Terms and definitions

For the purposes of this Standard, the terms and definitions in AS/NZS 3000 and those below apply. Where an additional term is defined in a particular section or clause, the term takes the meaning defined in that section or clause.

1.4.1
accessible, readily
capable of being reached quickly and without climbing over or removing obstructions, or using a movable ladder, and in any case not more than 2.0 m above the ground, floor or platform

1.4.2
caravan park
camping ground
area of land —

(a) that is used, or intended to be used, to site two or more connectable electrical installations for recreational purposes; and

(b) on which fittings are installed to supply electricity to those connectable electrical installations

1.4.3
competent person
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

1.4.4
connectable electrical installation
electrical installation of a *non-recreational vehicle* (1.4.6), a *recreational vehicle* (1.4.8) or a *relocatable unit* (1.4.9) that is designed, intended for, or capable of, connection to an external low voltage power supply by detachable connection

1.4.5
may
indicates the existence of an option

1.4.6
non-recreational vehicle
<1> trailer designed to be towed by a road vehicle that has the provision for, or is intended for connection to a low voltage supply from an external source that is not deemed to be a *recreational vehicle* (1.4.8)

<2> self-propelled vehicle with the same features as per <1>

EXAMPLE Cars, trucks and trailers including but not limited to: horse floats; semi-trailers; livestock or car transporters; vehicles such as food and drink vending vans and trailers; educational display caravans and trailers, mobile classrooms; television outside broadcast vans; mobile stages; display units e.g. mobile electronic score boards and advertising signs, mobile traffic information signs; or any towable, self-propelled or hybrid vehicle that does not fit specifically into any of the above categories.

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1.4.7
occupier
person who occupies a site or who is responsible for a group of persons, such as a family, that will normally occupy that site

1.4.8
recreational vehicle
<1> trailer designed to be towed by a road vehicle, often used for living and accommodation, and has the provision for, or is intended for connection to a low voltage supply from an external source

<2> self-propelled vehicle with the same features as per <1>

EXAMPLE Including but not limited to: camper vans; motor homes; camper trailers; caravans; pop top caravans; tent trailers; fifth wheel caravans; slide on campers; converted buses or trailers for the use of accommodation or recreational purposes; any towable, self-propelled or hybrid vehicle intended for use as accommodation or recreational purposes that does not fit specifically into any of the above categories; or *vehicles* (1.4.16).

Note 1 to entry: Vehicles such as mobile site offices and similar, that are not used for living accommodation or recreational purposes, are not deemed to be recreational vehicles, see *non-recreational vehicles* (1.4.6).

1.4.9
relocatable unit
designed for human occupation that may be relocated from one site to another and has the provision for or is intended for connection to a low voltage supply from an external source

EXAMPLE Relocatable site offices, cloakrooms, meeting offices, dormitories, canteens, toilets, workshops, site huts or other facilities.

1.4.10
service pillar
assembly that includes circuit protection devices and one or more socket-outlets suitably arranged together including its enclosure and supporting structure, for the purpose of supplying power to *connectable electrical installations* (1.4.4) and *vehicles* (1.4.16)

Note 1 to entry: For requirements for service pillars, see Clause 2.4.

1.4.11
shall
indicates a statement is mandatory

1.4.12
should
indicates a recommendation

1.4.13
site
area in a *caravan park* (1.4.2), *camping ground* (1.4.2) or other location intended for the placement of one or more *connectable electrical installations* (1.4.4) under the control of one occupier

1.4.14
supply lead
socket-outlet and plug arrangement, or a lead permanently connected to the connectable electrical installation, used to connect connectable electrical installation to the site supply

1.4.15
switchboard
assembly of circuit protective devices, with or without switchgear, instruments or connecting devices, suitably arranged and mounted for distribution to, and protection of, one or more submains or final subcircuits, or a combination of both

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1.4.16
vehicle
means for transporting people, animals or goods, on land

EXAMPLE Cars, trucks and trailers, including but not limited to: *non-recreational vehicles* (1.4.6), *recreational vehicles* (1.4.8), mobile offices, break facilities and similar; or rail vehicles (rolling stock).

1.5 Alterations and repairs

1.5.1 Alterations

Alterations to electrical installations of site supplies for connectable electrical installations shall comply with all relevant provisions of this Standard.

Alterations to electrical installations shall not cause any portion of the original electrical installation, or electrical equipment connected thereto, to —

(a) carry currents or sustain voltages in excess of those permitted by this Standard; or

(b) be used in any manner that is not in accordance with this Standard.

1.5.2 Repairs

Repairs to existing electrical installations of site supplies for connectable electrical installations or parts thereof may be effected using methods, fixtures and fittings that were acceptable when that part of the electrical installation was originally installed or with methods, fixtures and fittings currently available as direct replacement, provided that the methods satisfy the fundamental safety principles of Part 1 of AS/NZS 3000.

In New Zealand, see Clause 2.4.2 for service pillar repair requirements. NZ

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Section 2 Supply arrangements for connectable electrical installations

2.1 Supply arrangements in caravan parks

2.1.1 General

Electrical installations in caravan parks for the supply to connectable electrical installations shall be carried out in accordance with the appropriate requirements of AS/NZS 3000, except as varied herein, and with the applicable additional requirements of this Section.

NOTE See Appendix D for typical caravan park/camping ground supply arrangements.

2.1.2 Supplies

The low voltage electrical supply for site supplies to connectable electrical installations shall be in accordance with:

(a) AS/NZS 3000; and

(b) the additional or modified requirements of this Standard; and

(c) other applicable Standards, including but not limited to:

(i) AS/NZS 4509 (all parts);

(ii) AS/NZS 3010;

(iii) AS/NZS 5033;

(iv) AS/NZS 4777 (all parts);

(v) AS/NZS 4763; and

(vi) AS/NZS 5139.

See Figure 2.1 for supply arrangements.

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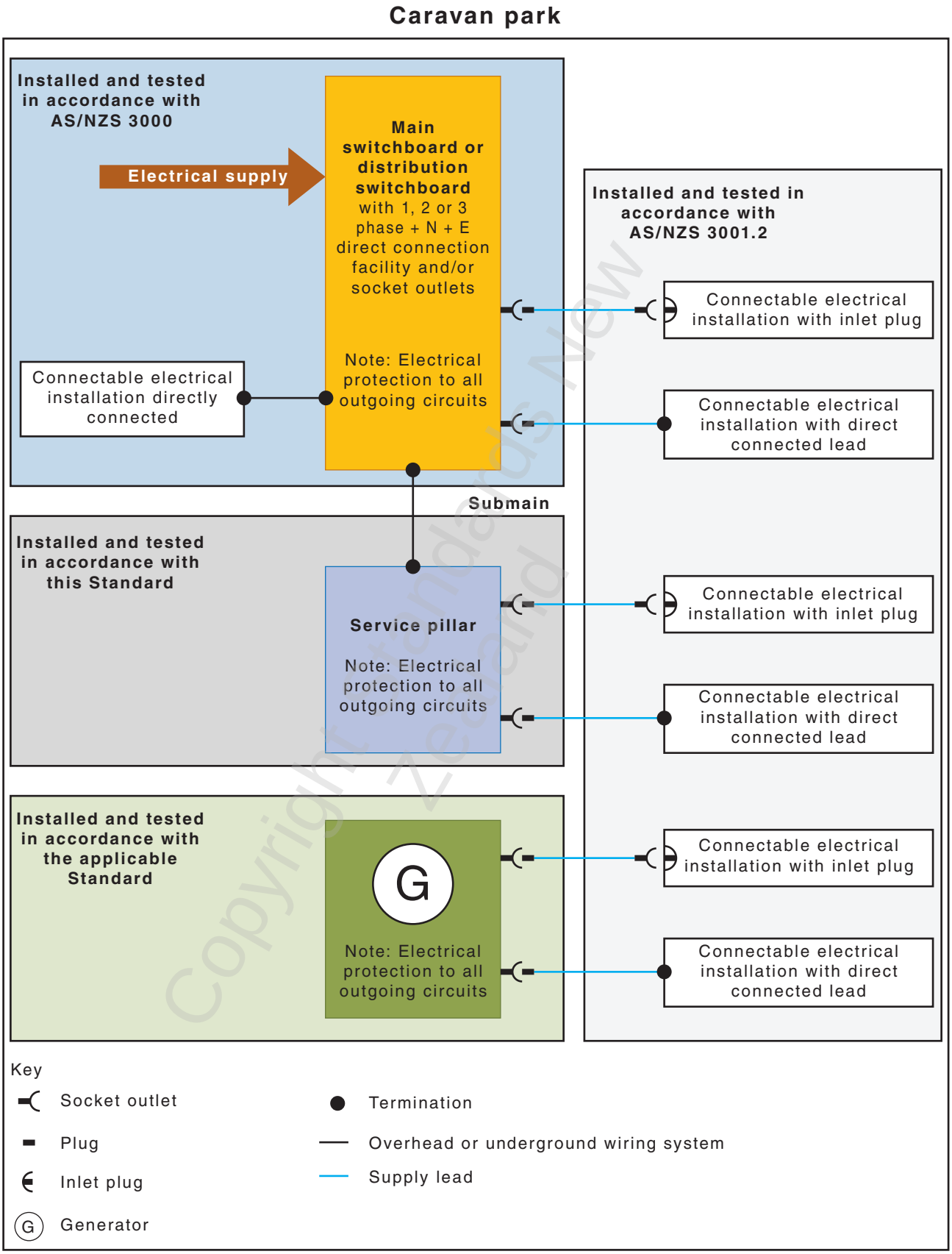


Figure 2.1 — Typical supply arrangements

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2.1.3 Supply to service pillars

For the purpose of this Standard, the wiring systems supplying service pillars are deemed to be submains.

The supply to service pillars shall be installed as —

(a) individual submains supplying a single service pillar; or

(b) common submains supplying multiple service pillars; or

(c) common submains supplying multiple service pillars as a ring circuit.

Typical arrangements for these supply connections are shown in Figures 2.3 to 2.5 for Australia. Item (a) is shown in Figure 2.7 for New Zealand.

2.1.4 Common submains

Where common submains are used, connection of all conductors of the submains at each service pillar shall be such that disconnection of that pillar from the incoming supply conductors does not adversely affect either —

(a) the continuity of supply to any other service pillar; or

(b) the connection of any other service pillar to the installation's earthing system.

Where a service pillar is supplied by an individual branch from a common submain, the length of the branch shall not exceed 3 m.

Typical arrangements for supply to service pillars using common submains in New Zealand are shown in Figure 2.8.

2.1.5 Ring circuits

Where a common submain is connected as a ring circuit, both ends of each live conductor shall be connected to the same terminal at the origin of the circuit.

NOTE A ring circuit can be a useful way to overcome voltage drop where multiple service pillars are installed. However, the prospective fault current on a ring circuit can be appreciably greater than for a radial circuit.

2.2 Switchboards

Any switchboard fixed to a building or other structure that contains one or more socket-outlets used to provide supply to a site shall comply with the requirements of AS/NZS 3000.

2.3 Wiring systems

2.3.1 General

The requirements for underground and aerial wiring systems shall be in accordance with AS/NZS 3000 and the additional requirements, or as varied by this Standard.

2.3.2 Underground wiring

2.3.2.1 Underground wiring for site supplies

The relevant requirements of AS/NZS 3000 shall apply to underground wiring located where pegs or anchor stakes are not expected to be driven.

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Underground wiring shall be located at a depth of not less than 1 m where pegs or anchor stakes can reasonably be expected to be driven.

NOTE Pegs or anchor stakes longer than 400 mm may be used for tents/annexes at sites that are exposed to extreme weather conditions.

Exception 1: Where the underground wiring system depth of burial is less than 1 m, mechanical protection greater than that required by AS/NZS 3000 shall be provided by —

(a) *a continuous pour of concrete, which is —*

(i) *placed not more than 75 mm above the wiring system; and*

(ii) *a thickness of not less than 100 mm; and*

(iii) *not be less than 150 mm wide; and*

(iv) *overlapping the wiring system by at least 40 mm on each side; or*

(b) *an alternative means that provides an equivalent level of mechanical protection to Item (a).*

Exception 2: Where rock is encountered closer to the surface than 1 m, the cable shall be enclosed in heavy gauge galvanized steel tube or heavy duty insulating conduit installed as a Category C underground wiring system in accordance with AS/NZS 3000.

2.3.2.2 Spacing from other underground services

All underground wiring systems shall be spaced not less than 100 mm from other underground services.

Wiring systems shall maintain a separation from telecommunications, gas and water services in accordance with Table 2.1.

Further requirements for the separation of telecommunications, gas and water systems from low voltage wiring systems are provided in AS/NZS 3000.

Table 2.1 — Minimum separation of underground services

Type of service	Minimum separation of low voltage electrical service identified in accordance with Clause 2.3.2.4 and mechanically protected[1] mm	Minimum separation of conductive enclosures to low voltage electrical earthing electrode[1] mm
Water service not greater than DN65[2]	100	500
Water service greater than DN65[2]	300	500
Sanitary drainage	100	500
Stormwater drainage	100	600
Gas	100	500
Telecommunications	100	-

NOTE 1 Authorities, such as water and gas suppliers and electricity distributors, may require their services to be spaced at a greater distance from underground wiring systems.

NOTE 2 DN = internal diameter of pipe.

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Exceptions: These requirements shall not apply to the following:

1. *Two or more underground wiring systems may be grouped together where they are associated with the same electrical installation.*

2. *The requirements of this Clause may be varied where a number of services are installed touching in a common trench, provided that each service is installed in a separate enclosure that identifies the service.*

3. *Separation distances between conductive enclosures and the earthing electrode are not required where all conductive enclosures are bonded within the installation.*

2.3.2.3 Identification of underground wiring providing site supply

Wiring systems installed underground shall be identified by an orange marker tape complying with AS/NZS 2648.1, or orange polymeric cable protection complying with AS 4702. In order to provide early detection of the presence of underground wiring during excavation work, identification shall be positioned at approximately 50 % of the depth of cover above the wiring system or any additional mechanical protection provided for that system.

Where the wiring system is chased in rock, orange identification shall be laid directly on top of the wiring system before the concrete is poured.

Exception: Identification may be omitted where an underground wiring system is installed by boring, provided that —

(a) *the location of the wiring system is marked and recorded in a suitable permanent location that is readily available to any person involved with excavation work at the location of the wiring system; and*

(b) *if an enclosure is retained after boring operations, the enclosure is coloured orange.*

2.3.2.4 Recording and marking of underground cable location

To minimize damage to underground wiring systems during manual or mechanical excavation works, the location of underground wiring shall be recorded or marked as follows:

(a) recorded on a plan to enable the location of the cable to be determined in the future. This plan shall be located at the switchboard from which the circuit originates. The plan locating the consumer mains shall be kept at the main switchboard of the installation to which it is connected; and

(b) marked with permanent cable marker signs to indicate the point where a cable enters or leaves a structure.

Exception: Cable entry signs need not be provided where the position of underground cable entry into the ground is obvious.

2.3.3 Aerial wiring systems

2.3.3.1 General

Aerial wiring systems shall consist of either —

(a) insulated aerial conductors; or

(b) cable supported by a catenary.

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2.3.3.2 Aerial wiring systems

Overhead aerial wiring shall be installed so that cables are maintained at a height of not less than 6 m above the ground or relevant elevated area.

Overhead aerial wiring shall be located at a minimum of 2 m outside the vertical plane extending from the horizontal boundary of any site.

If overhead wiring crosses a roadway or access-way, two additional flagged cables (or other suitable warning cables) shall be installed 6 m either side of the overhead wiring, and at least 0.6 m below the lowest point of the overhead wiring (see Figure 2.2).

When strung up, all cables shall either be able to support their own weight at the appropriate height, as an insulated aerial conductor, or be supported by a secondary (catenary) wire or rope.

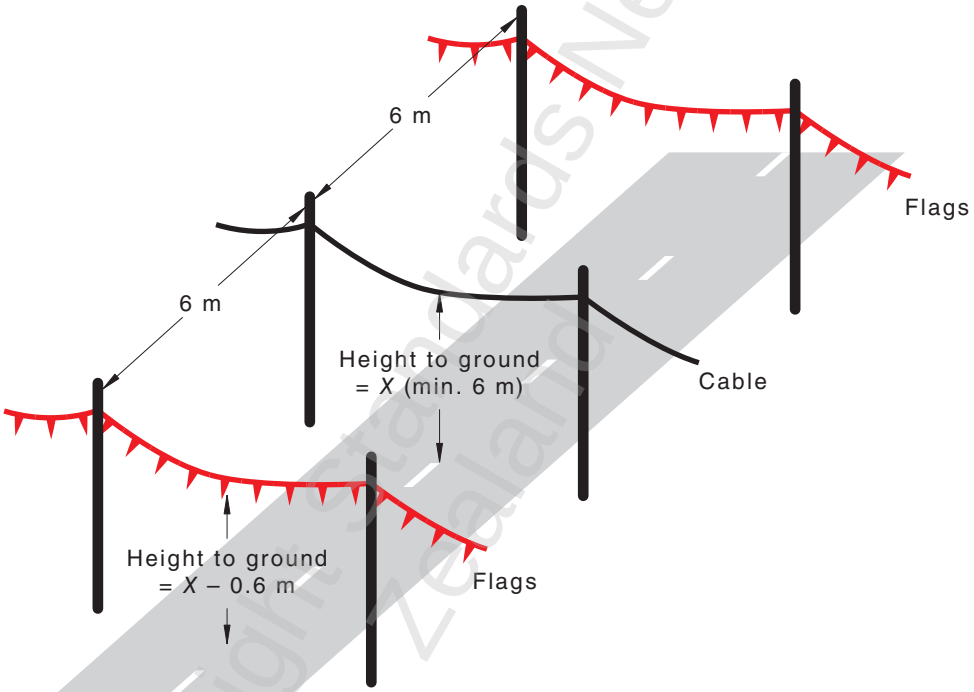


Figure 2.2 — Aerial wiring vertical height to ground minimum distance — Ground to catenary and cable

2.3.4 Catenary wiring systems

2.3.4.1 Types of cables

Cables supported by means of a catenary shall be stranded cables with double insulation or the equivalent of double insulation.

Cables and catenary supports installed out of doors shall be suitable for exposure to direct sunlight.

NOTE Cables are considered to be adequately supported if supported by a catenary and thereby relieved from excessive mechanical stresses.

2.3.4.2 Catenary supports

A catenary shall —

(a) provide uniform support;

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(b) consist of material equally resistant to corrosion or deterioration;

(c) be effectively fixed at each end;

(d) be capable of withstanding mechanical stresses that may occur due to wind or ice; and

(e) be mounted at the heights specified for aerial wiring systems. See Clause 2.3.3.

NOTE A catenary may form part of a cable, in which case it should be installed with reference to the instructions for use.

2.3.4.3 Clearances

Cables supported by means of a catenary shall be installed to the clearances specified for aerial wiring systems. See Clause 2.3.3 and Figure 2.2.

2.4 Service pillars

2.4.1 General

Service pillars are characterized by —

(a) being part of a freestanding structure situated amongst a number of sites; and

(b) incorporating an enclosure for the mounting of overcurrent load, earth leakage and control devices for the socket-outlets installed in the pillar.

Service pillars may contain other equipment subject to the requirements of AS/NZS 3000 and may also contain other services.

2.4.2 Alterations and repairs

2.4.2.1 In Australia

AS

Alterations and repairs to service pillars shall be performed in accordance with the requirements of Clause 1.5.

2.4.2.2 In New Zealand

NZ

In New Zealand only, where a service pillar either —

(a) has a socket-outlet added; or

(b) undergoes repair, which includes replacement of any socket-outlet or its overcurrent protection;

alterations shall be such that all socket-outlets supplied from that service pillar comply with Clauses 2.4.6.4 and 2.4.6.5.

2.4.3 Location

Each service pillar shall be located so as to enable a 10 m supply lead to be connected to each applicable connectable electrical installation.

NOTE The minimum length of supply leads is 10 m, as detailed in AS/NZS 3001.2.

2.4.4 Accessibility

Service pillars shall be readily accessible.

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2.4.5 Construction

2.4.5.1 General

Service pillars shall be of robust assembly and constructed of materials that are resistant to corrosion and deterioration due to environmental influences, such as high ultraviolet light levels or a salt-laden atmosphere.

2.4.5.2 Height

Where a service pillar is less than 1.5 m high, a device to increase the effective clearly visible height or some other means of preventing accidental damage shall be provided to prevent collision with the pillar.

NOTE Such protective measures typically include installing kerbing or barriers to prevent vehicle movements near the service pillar and flags or wands of a colour that is clearly visible to drivers manoeuvring vehicles.

2.4.5.3 External influences

The choice of electrical equipment and the means of construction of each service pillar shall be such that all components are provided with a degree of protection of not less than IPX4, in accordance with AS 60529.

For socket-outlets, this level of protection shall be provided both when plugs are inserted or removed.

Where specific local environmental conditions, such as the presence of nearby fixed sprinklers or a salt or dust laden atmosphere, are present, a minimum of IPX5 or greater degree of protection shall be installed. For example, the location of a service pillar in proximity to fixed water sprinklers would require a minimum degree of protection of IPX5.

2.4.5.4 Doors and covers

Where external doors and/or covers are fitted to the service pillar, the construction shall be such as to permit the door or cover to be opened and closed without the need to remove any flexible cords or cables attached to the connection facilities or risk damage to the cords or cables.

2.4.5.5 Identification

Where there is more than one service pillar in a caravan park or camping ground, each service pillar shall be legibly and indelibly identified in English by a unique set of numbers or letters, or some combination of the two.

2.4.5.6 Segregation of wiring systems

Low voltage wiring shall be segregated from any other wiring systems in the service pillar as required by AS/NZS 3000; including extra-low voltage (ELV), telecommunications cabling or TV aerial cabling.

2.4.5.7 Strain relief

Each service pillar shall be provided with a means of relieving the strain on the supply lead plug when the plug is connected to the pillar.

2.4.6 Socket-outlets

2.4.6.1 General

A service pillar intended to supply electricity to a number of sites shall have at least one socket-outlet for each site to be supplied from that pillar.

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2.4.6.2 Configuration and rating

Each socket-outlet on a service pillar shall —

(a) in both Australia and New Zealand, comply with AS/NZS 3112 (three-pin, flat-pin) with a minimum rating of 15 A; or

(b) in Australia, comply with AS/NZS 3123 (round pin) with a minimum rating of 20 A; or AS

(c) in New Zealand, comply with IEC 60309-2 (round pin) with a minimum rating of 16 A. NZ

NOTE The type and rating of the socket-outlets should be appropriate for local conditions (including the requirements of any relevant regulatory authorities) and reflect the types of plugs most likely to be used by patrons of the caravan park or camping ground.

2.4.6.3 Marking of socket-outlets

Each socket-outlet on a service pillar shall be legibly and indelibly identified in the English language, indicating the site that it is intended to supply.

2.4.6.4 Overcurrent protection

The following requirements apply to overcurrent protection:

(a) Each socket-outlet mounted on a service pillar shall be individually protected by a separate circuit-breaker that is clearly identified to indicate the socket-outlet that it controls, either by its location in relation to the socket-outlet, or by some form of unambiguous complementary marking.

(b) The rating of each over-current protective device shall be less than or equal to the rating of the socket-outlet.

NOTE 1 The consequences of protecting a socket-outlet with an overcurrent protection device of lesser rating in relation to the load should be considered.

Exception: A 16 A overload protective device as overcurrent protection for a 15 A three pin, flat-pin fittings (socket-outlets) complying with AS/NZS 3112 for supply to connectable electrical installations is deemed to comply.

The interrupting capacity of the overcurrent protection device shall be not less than the prospective short circuit current at the point where the device is installed.

NOTE 2 Typical service pillar configurations are shown in Figure 2.3 for Australia and Figure 2.6 for New Zealand.

2.4.6.5 Protection against earth leakage

All socket-outlets shall be protected by one or more RCDs with rated residual current not exceeding 30 mA that —

(a) interrupt all live (active and neutral) conductors; and

(b) are of a type that provides protection against electric shock that complies with the requirements of a Type A RCD in accordance with AS/NZS 61008.1 or AS/NZS 61009.1.

RCDs incorporating Type A functionality along with additional functionality may be installed, including —

(i) Type F for the protection of circuits carrying high frequency leakage currents, such as those associated with frequency converters and electronic ballasts; or

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(ii) Type B where power inverters or frequency inverters are installed, as specified in the manufacturer's instructions for the specific current-using equipment.

NOTE Typical service pillar configurations are shown in Figure 2.3 for Australia and Figure 2.6 for New Zealand.

2.4.6.6 Control

Each socket-outlet on or in a service pillar shall be controlled by its own individual switch that is —

(a) mounted immediately adjacent to the socket-outlet it controls or is otherwise suitably identified as to the socket-outlet it controls; and

(b) clearly identified to indicate the off and on positions.

A socket-outlet that is switched by the insertion and withdrawal of the plug is deemed to meet the requirements of this Clause.

A combined RCD and overcurrent circuit-breaker (RCBO) complying with the requirements of AS/NZS 61009.1 may be used to satisfy this requirement.

NOTE Typical service pillar configurations are shown in Figure 2.3 for Australia and Figure 2.6 for New Zealand.

2.4.6.7 Height of socket-outlets and associated devices

Each socket-outlet and each associated circuit-breaker, RCD and operating switch mounted on or in a service pillar shall be located not more than 1.5 m above the surface on which an operator would stand.

2.4.7 Earthing

2.4.7.1 General earthing arrangements

Earthing arrangements for service pillars shall be installed to the following requirements.

2.4.7.2 In Australia

AS

Service pillars shall be earthed by one of the following methods in accordance with AS/NZS 3000 for individual outbuildings:

(a) Connected to a protective earthing conductor. See Figure 2.4.

(b) Connected as a separate MEN installation. See Figure 2.5.

Further information on the requirements of these earthing arrangements are in AS/NZS 3000.

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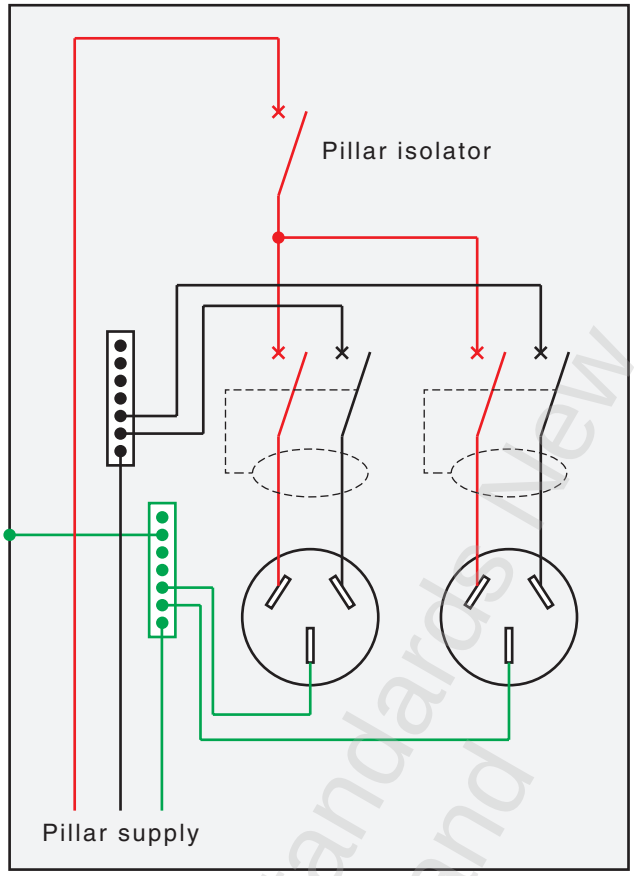
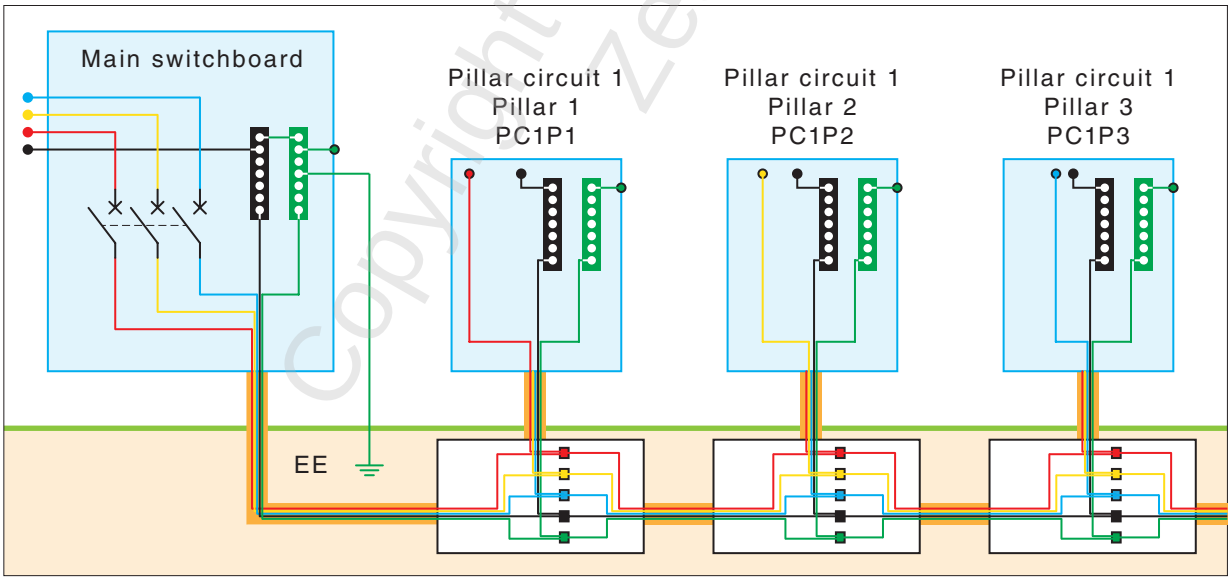


Figure 2.3 — Typical service pillar wiring (Australia only) AS



NOTE 1 Electrical protection, switches, outlets and metering configuration have been removed for simplification.

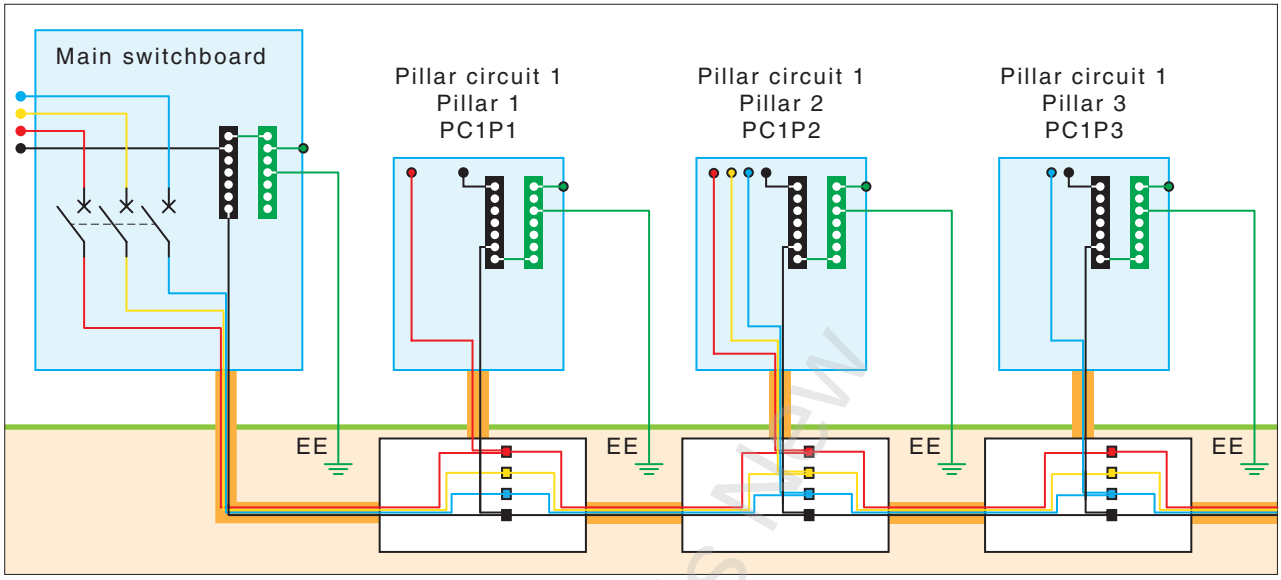
NOTE 2 These connections should be made within a pit or pillar that is independent of neutral and earthing pillar terminations.

Figure 2.4 — Typical earthing arrangements for service pillars with carried earth (Australia only) AS

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NOTE 1 Electrical protection, switches, outlets and metering configuration have been removed for simplification.

NOTE 2 These connections should be made within in a pit or pillar that is independent of neutral and earthing pillar terminations.

Figure 2.5 — Typical earthing arrangements for service pillars with individual earthing arrangements (Australia only) AS

2.4.7.3 In New Zealand NZ

2.4.7.3.1 General

Service pillars shall not include any connection between N and E. The earthing arrangements for each service pillar shall comply with Clauses 2.4.7.3.2 to 2.4.7.3.3. Typical arrangements for earthing at service pillars are shown in Figures 2.6, 2.7 and 2.8.

2.4.7.3.2 Protective earthing

The supply to each switchboard or service pillar supplying socket-outlets for supply to connectable electrical installations shall include a protective earthing conductor with a minimum size of 16mm^2.

In accordance with Clause 2.1.4, where a common submain supplies more than one service pillar or switchboard, disconnection of the protective earthing conductor at any switchboard service pillar or switchboard shall not adversely affect the earthing of any other service pillars or switchboards.

2.4.7.3.3 Supplementary earthing

Each service pillar or switchboard shall have an earth electrode complying with AS/NZS 3000 requirements connected to the service pillar by a supplementary earthing conductor complying with AS/NZS 3000 requirements for a main earthing conductor.

The supplementary earthing conductor shall be labelled to distinguish it from the submain protective earthing conductor(s).

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Where horizontal electrodes are used, they may be connected together as one continuous electrode with a connection to each service pillar or switchboard, provided that the total length is at least equivalent to having a separate electrode for each pillar.

NOTE 1 This electrode and supplementary earthing conductor are intended to protect against the adverse effects of earth potential rise; which might otherwise result in the earthing system at the pillar being at a different potential from the local ground in the immediate area of the pillar.

NOTE 2 A horizontal electrode is preferred, as it is likely to provide better connection to local ground than a vertical electrode.

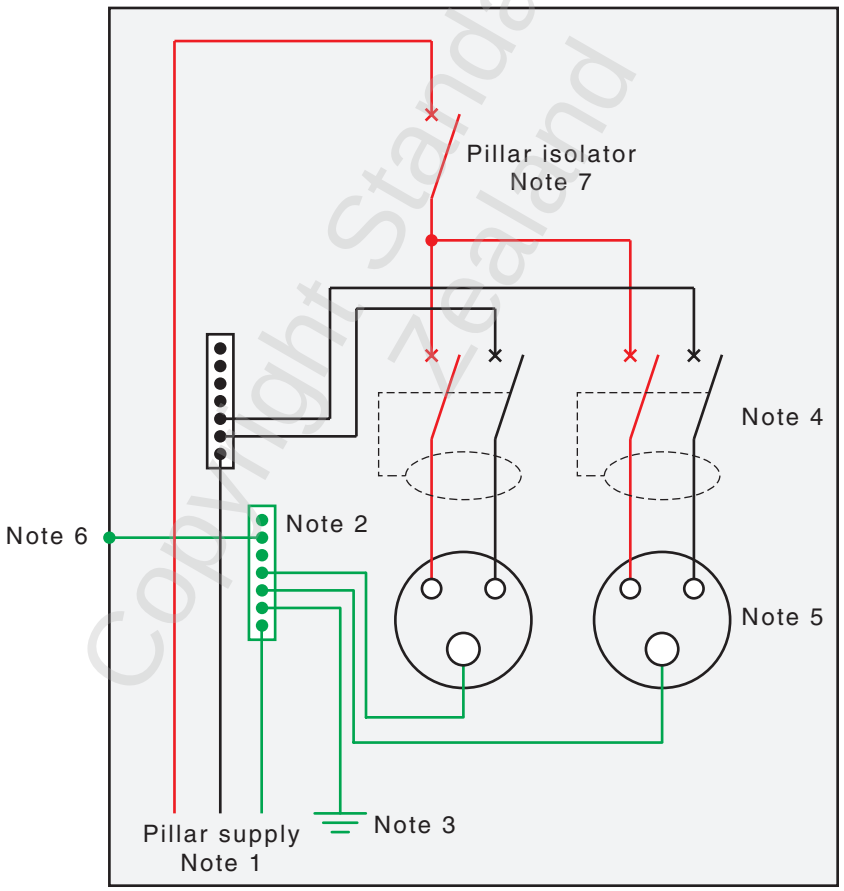
2.4.7.4 Earth busbar

Each service pillar or switchboard shall include an earth bar that has a separate terminal for each of the following:

(a) Incoming submain protective earthing conductor.

(b) Supplementary earthing conductor.

(c) Protective earthing conductor for each final subcircuit.



NOTE 1 Incoming submain, see Clause 2.1.

NOTE 2 Earth busbar, see Clause 2.4.7.3.

NOTE 3 Supplementary earth conductor and earth electrode, see Clause 2.4.7.3.

NOTE 4 Overcurrent protection, RCD protection, and control, see Clause 2.4.6.

NOTE 5 Socket-outlet(s), see Clause 2.4.6.

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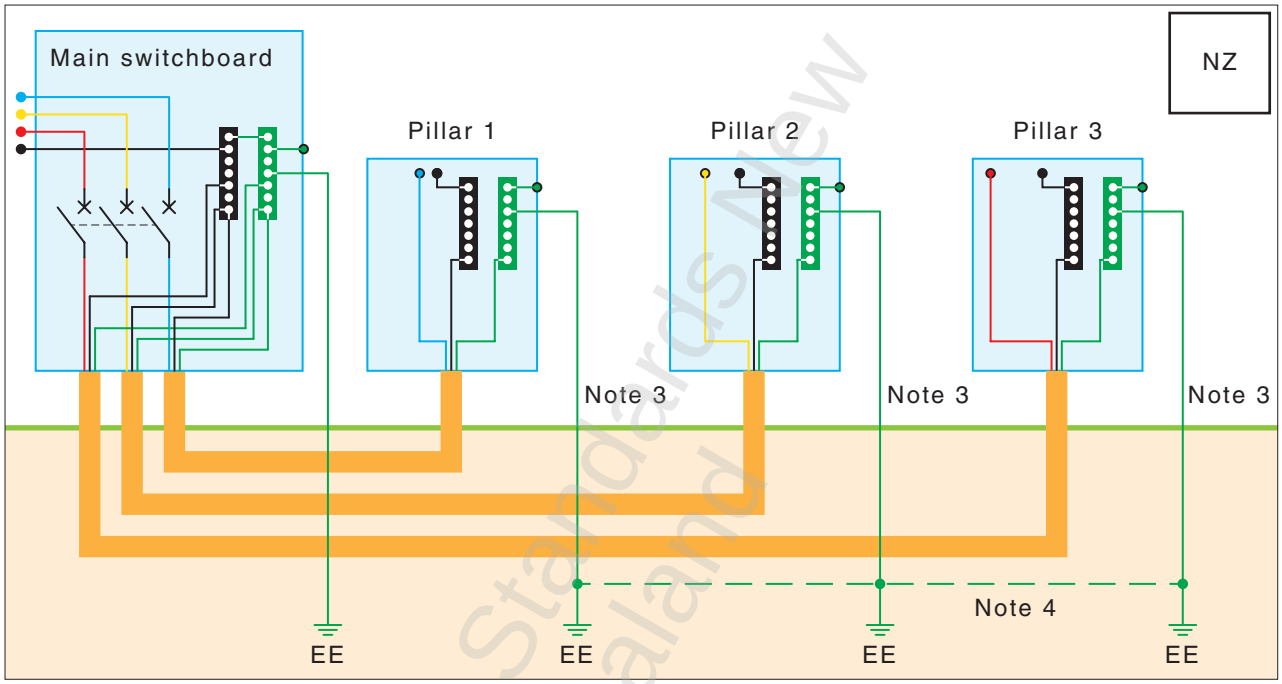
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NOTE 6 Protective earth, if enclosure is conductive.

NOTE 7 Pillar isolator, if used, may provide overload protection of lesser current-carrying capacity than main run of submain.

Figure 2.6 — Typical service pillar wiring (New Zealand only) NZ



NOTE 1 Single phase shown; may be multiphase.

NOTE 2 Control and protection devices in pillars, see Clause 2.4.6, omitted for clarity. See Figure 2.6.

NOTE 3 Earth electrodes and supplementary earth conductors, see Clause 2.4.7.3.3.

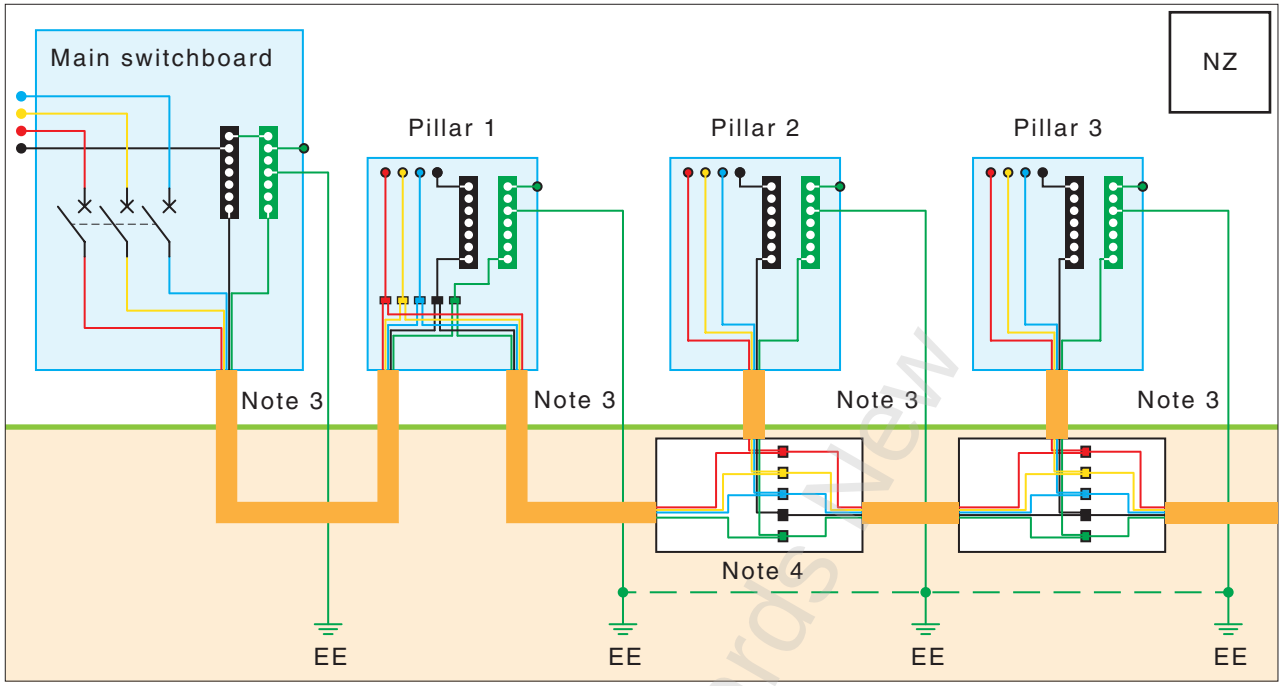
NOTE 4 See Clause 2.4.7.3; horizontal electrodes for pillars supplied from the same switchboard may be continuous, with tee-offs to each pillar.

NOTE 5 See Clause 2.1.3 for information on supply to service pillars.

Figure 2.7 — Typical supply to service pillars using separate submains (New Zealand only) NZ

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NOTE 1 Submain branch connections to each pillar, see Clause 2.1.4, may be made either:

(a) within the pillar's switchboard enclosure (as shown for Pillar 1); or

(b) underground or in a pit or pillar box, (as shown for Pillars 2 and 3).

NOTE 2 Control and protection devices in pillars, see Clause 2.4.6, omitted for clarity. See Figure 2.6.

NOTE 3 Earth electrodes and supplementary earth conductors, see Clause 2.4.7.3.3.

NOTE 4 See Clause 2.4.7.3. Horizontal electrodes for pillars supplied from the same switchboard may be continuous, with tee-offs to each pillar.

NOTE 5 Common submains may be configured as a ring circuit, see Clause 2.1.5.

NOTE 6 Clause 2.1.4 sets requirements for use of common submains.

Figure 2.8 — Typical supply to service pillars using common submains (New Zealand only) NZ

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Section 3 Supply arrangements to connectable electrical installations at other locations

3.1 General

Electrical installations at other locations for the supply to connectable electrical installations shall be carried out in accordance with the appropriate requirements of AS/NZS 3000, except as varied herein, and with the applicable additional requirements of this Section. See Figure 3.1.

Exception: This requirement need not apply where supply is taken from a portable generator or inverter.

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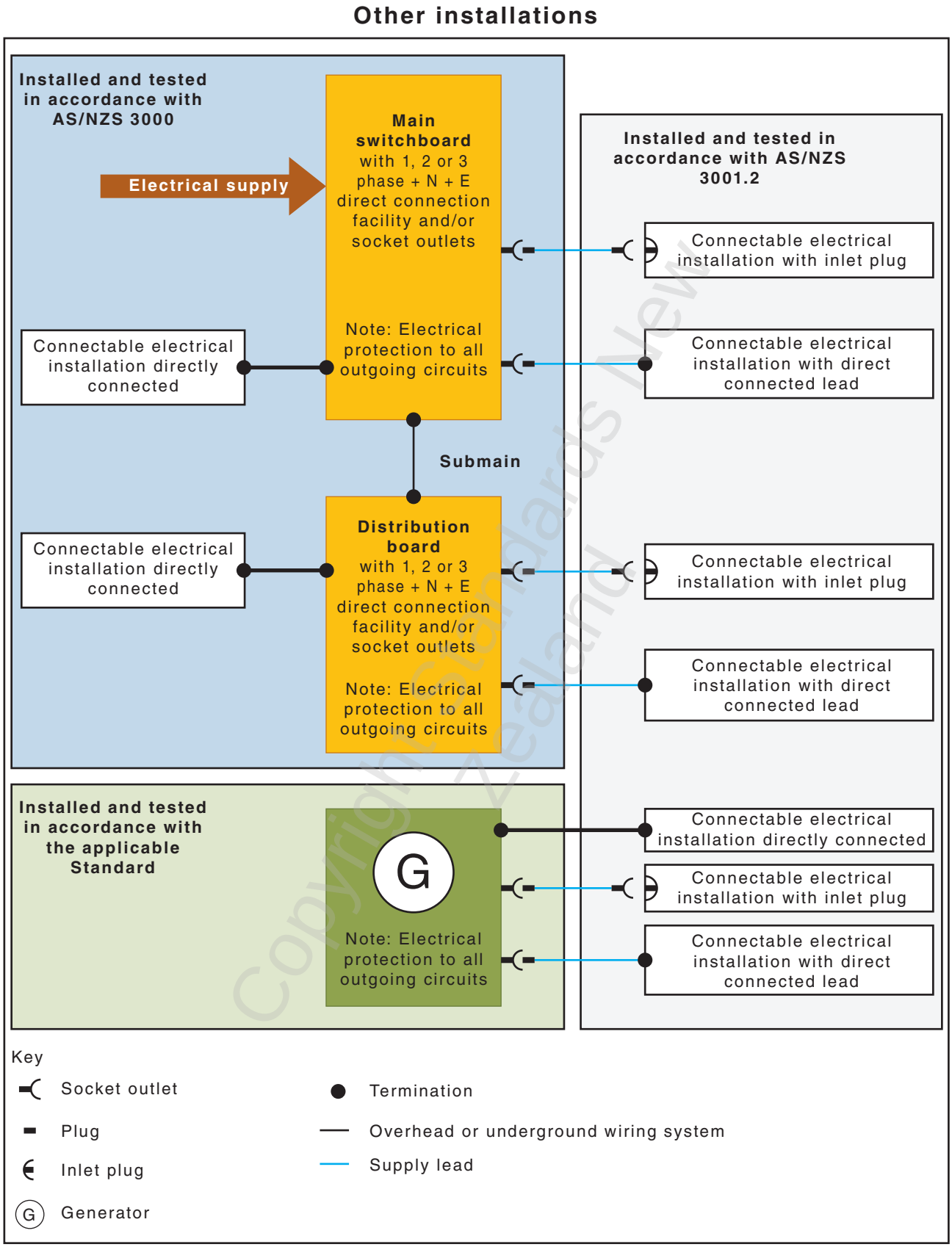


Figure 3.1 — Typical supply arrangements for connectable electrical installations at other locations

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3.2 Configuration and rating

For locations other than caravan parks, single-phase socket-outlets or multi-phase socket-outlets used to supply connectable electrical installations shall comply with one of the following:

(a) AS/NZS 3112 (three-pin, flat-pin); or

(b) AS/NZS 3123 (round pin); or

(c) IEC 60309-2 (round pin).

Multi-phase socket-outlets shall comply with one of the following:

(i) AS/NZS 3123 (round pin); or

(ii) IEC 60309-2 (round pin).

NOTE 1 The type and rating of the socket-outlets should be appropriate for local conditions (including the requirements of any relevant regulatory authorities) and reflect the types of plugs most likely to be used.

NOTE 2 Other outlets to accommodate specific connectable electrical installations may be provided subject to approval by the regulatory authority.

3.3 Overcurrent protection

The following shall apply for overcurrent protection:

(a) Each socket-outlet shall be individually protected by a separate overcurrent protective device that is clearly identified to indicate the socket-outlet that it controls.

(b) The rating of each of these overcurrent protective devices shall be less than or equal to the rating of the socket-outlet.

NOTE The consequences of protecting a socket-outlet with an overcurrent protection device of lesser rating to the load should be considered.

Exception: A 16 A overload protective device as overcurrent protection for 15 A three-pin flat-pin fittings (socket-outlets) in accordance with AS/NZS 3112 for supply to connectable electrical installations is deemed to comply.

The interrupting capacity of the overcurrent protection device shall be not less than the prospective short circuit current at the point where the device is installed.

3.4 Protection against earth leakage

Socket-outlets used to supply connectable electrical installations shall be protected by one or more RCDs with rated residual current not exceeding 30 mA that —

(a) interrupt all live (active and neutral) conductors; and

(b) are of a type that provides protection against electric shock that complies with the requirements of a Type A RCD, in accordance with AS/NZS 61008.1 or AS/NZS 61009.1.

RCDs incorporating Type A functionality along with additional functionality may be installed, including —

(i) Type F for the protection of circuits carrying high frequency leakage currents, such as those associated with frequency converters and electronic ballasts; or

(ii) Type B where power inverters or frequency inverters are installed, as specified in the manufacturer's instructions for the specific current-using equipment.

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A combined RCD and overcurrent circuit-breaker (RCBO) complying with AS/NZS 61009.1 may be used to provide the requirements of Clauses 3.3 and 3.4.

NOTE This does not preclude protection of more than one socket-outlet by a single RCD; however, one RCD should be provided for each socket-outlet to reduce both the possibility and consequences of unwanted tripping.

3.5 Control

Each socket-outlet used to supply connectable electrical installations shall be controlled by its own individual control switch. The switch shall be —

(a) mounted immediately adjacent to the socket-outlet it controls or otherwise suitably identified as to the socket-outlet it controls; and

(b) clearly identified to indicate the off and on positions.

A socket-outlet that is switched by the insertion and withdrawal of the plug is deemed to meet the requirements of this clause.

3.6 External influences

Socket-outlets providing site supply to a connectable electrical installation shall be provided with a degree of protection not less than IPX4 in accordance with AS 60529, both when plugs are inserted or removed.

A higher degree of protection shall be provided where specific local environmental conditions such as the presence of nearby fixed sprinklers or a salt or dust laden atmosphere is present. For example, the location of a socket-outlet in proximity to fixed water sprinklers requires a minimum degree of protection of IPX5.

3.7 Doors and covers

Where external doors and/or covers are fitted to the enclosure containing the socket-outlets, the construction shall be such as to permit the door or cover to be opened and closed without the need to remove any flexible cords or cables attached to the connection facilities or risk damage to the cords or cables.

3.8 Strain relief

Each socket-outlet shall be provided with a means of relieving the strain on the supply lead plug connected to the socket-outlet.

Each socket-outlet shall be provided with a means of relieving the strain on the cord extension set plug or supply lead plug connected to the socket-outlet.

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Section 4 Verification (inspection and testing)

4.1 Initial verification of the installation

Site supply arrangements for connectable electrical installations shall be tested in accordance with AS/NZS 3000 and this Standard.

4.2 Earth fault-loop impedance

The maximum earth fault-loop impedance when measured at any socket-outlet providing site supply shall not exceed the maximum value detailed in AS/NZS 3000 for a protective device with 0.4 s disconnection time.

NOTE The use of 0.4 s disconnection time for protective devices fitted to caravan park or camping ground socket-outlets is to ensure adequate touch voltage control is provided for all connectable electrical installations connected to those socket-outlets.

4.3 Periodic assessment (New Zealand only)

NZ

In New Zealand, periodic assessment shall be carried out as detailed in Appendix C.

NOTE Periodic assessment, including the issue of a Record of Assessment (ROA), is a regulatory requirement in New Zealand.

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Appendix A
(informative)

Maximum demand

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A.1 Introduction

The maximum demand for electrical installations in caravan parks or camping grounds is determined in accordance with AS/NZS 3000 by one of the following methods —

(a) calculation; or

(b) assessment; or

(c) measurement; or

(d) limitation.

A.2 Proposed calculation values

A.2.1 General

Where the maximum demand of submains is to be determined by calculation, the values given in Clauses A.2.1.1 and A.2.1.2 are provided as a guide to the types of loads specific to caravan parks or camping grounds.

A.2.1.1 Camping grounds

For submains supplying service pillars and other switchboards that provide site supply in camping grounds, the maximum demand of the socket-outlets installed in the pillar or switchboard may be estimated as follows:

Socket-outlets for light-duty loads:

(a)	1 to 6 points	6 A per point
(b)	7 to 50 points	36 A plus 4 A for the 7th and each successive point
(c)	51 to 100 points	212 A plus 3 A for the 51st and each successive point
(d)	More than 100 points	362 A plus 1 A for the 101st and each successive point

The values allocated above apply to socket-outlets rated at 15 A or 16 A. If socket-outlets rated at more than 15 A or 16 A are provided, the value per point to be used in calculating maximum demand is determined by multiplying the appropriate value listed by a factor found by dividing the actual point rating by 15 and rounding the result to the nearest whole number.

A.2.1.2 Caravan parks

For submains supplying service pillars and other switchboards that provide site supply in caravan parks, the maximum demand of the socket-outlets installed in the pillar or switchboard may be estimated as follows:

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Socket-outlets for heavy-duty loads:

(a)	1 to 6 points	10 A per point
(b)	7 to 50 points	60 A plus 6 A for the 7th and each successive point
(c)	51 to 100 points	324 A plus 3 A for the 51st and each successive point
(d)	More than 100 points	474 A plus 1 A for the 101st and each successive point

The values allocated above apply to socket-outlets rated at 15 A or 16 A. If socket-outlets rated at more than 15 A or 16 A are provided, the value per point to be used in calculating maximum demand is determined by multiplying the appropriate value listed by a factor found by dividing the actual point rating by 15 and rounding the result to the nearest whole number.

EXAMPLE 1 An installation of 6 × 32 A single-phase socket-outlets in a camping ground would be allocated the following maximum demand value:

The six outlets would be allocated the following value each:

$$6 \times \left(\frac{32}{15}\right) = 12.8 \quad = 13 \text{ A (rounded)}$$ [a]

Total = 6 × 13 = 78 A

[a] See Clause A.2.1.2 for maximum demand requirements greater than 15 A

EXAMPLE 2 An installation of 8 × 32 A single-phase socket-outlets in a caravan park:

(a) The first six connection points would be allocated the following value each:

$$10 \times \left(\frac{32}{15}\right) = 21.3 = 21 \text{ A (rounded)}$$

(b) The next two connection points would be allocated the following value each:

$$6 \times \left(\frac{32}{15}\right) = 12.8 = 13 \text{ A (rounded)}$$

(c) Maximum demand =

$$(21 \times 6) + (13 \times 2) = 152 \text{ A}$$

A.3 Determination of calculated maximum demand

The total calculated maximum demand is determined by totalling the values obtained from the calculations in accordance with Clauses A.2.1.1 and A.2.1.2.

Calculations should be made separately for each phase where the supply is multiphase.

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Appendix B
(informative)

Provision of connection instructions for caravan park or camping ground patrons

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It is recommended that the caravan park or camping ground operator provides all site occupiers intending to connect their connectable electrical installations to the site supply by means of a detachable connection with an instruction notice that conveys the following information:

(a) Do not connect more than one supply lead to each socket-outlet of the site supply.

(b) Any supply lead used to connect a connectable electrical installation to a site supply socket-outlet should be in one unbroken length.

(c) The supply of electricity for use in individual connectable electrical installations should not be obtained from a socket-outlet inside another connectable electrical installation or by the use of socket-outlet adaptors (double adaptors).

(d) Where a supply lead is coiled on or in a reel, drum, storage box or similar, the lead should not be connected to the site supply while coiled.

(e) Connectable electrical installations should be inspected regularly (e.g. annually) by a competent person to ensure their safe and effective operation.

(f) RCDs used for the protection of connectable electrical installations should be tested by operating the push-button on the RCD to check that the device trips. After tripping, the RCD should be reset. If the RCD fails to trip, this failure should be reported to the caravan park or camping ground manager.

(g) The location of the device (within the premises or at the service pillar) is required for resetting in the event of a loss of supply.

(h) Avoid placing supply leads in pedestrian ways.

(i) In New Zealand only, connectable electrical installations are not permitted to be connected to the electrical supply until a valid Warrant of Electrical Fitness (WoEF) is produced. NZ

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Appendix C
(normative)

Periodic assessment of caravan parks (New Zealand only) NZ

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C.1 Introduction

This appendix specifies the requirements for periodic assessment of installations in caravan parks.

C.2 Record of Assessment (RoA)

A Record of Assessment (RoA) shall only be issued for the periodic assessment of a caravan park that has been inspected in accordance with the general requirements of AS/NZS 3019 and the particular requirements of Clauses C.3 and C.4, and tested in accordance with Clauses C.5 and C.6. An example of an ROA assessment form is located at the end of Appendix C.

C.3 Inspection of caravan parks

C.3.1 Protection against direct contact

Caravan parks shall not have —

(a) exposed live parts, including damaged electrical equipment; or

(b) any exposed basic insulation.

C.3.2 Protection against indirect contact

Caravan parks shall not have exposed unearthed metallic parts designed to be earthed.

C.3.3 Wiring systems

C.3.3.1 Underground wiring systems

Underground wiring systems should be checked, as far as practicable, to ensure that changes to finished ground levels have not resulted in reduced depth of cover.

C.3.3.2 Aerial wiring systems

Aerial wiring systems shall be checked to ensure that clearances required by AS/NZS 3000 and this Standard have not been reduced in a way that compromises safety, and that vegetation remains safely clear of the wiring. See Clause 2.3.3.2.

C.3.4 Service pillars

C.3.4.1 Structural integrity

Service pillars shall not have damage or corrosion that reduces electrical safety. Service pillars shall be securely mounted, in accordance with Clause 2.4.5.1.

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Doors and covers shall:

(a) be securely retained; and

(b) operate freely; without risk of damage to supply leads, in accordance with Clause 2.4.5.4.

Service pillars with a height less than 1.5 m shall either have a device securely attached for increased visibility to drivers, or a barrier to prevent vehicles from colliding with the pillar, in accordance with Clause 2.4.5.2.

C.3.4.2 Accessibility

All socket-outlets, switches, and protective devices on service pillars shall be readily accessible.

C.3.4.3 Weatherproofing

Service pillars and associated equipment shall be suitable for the environment, in accordance with Clause 2.4.5.3.

C.3.4.4 Identification

The service pillar identification marking required by Clause 2.4.5.5 shall be clear and indelible.

C.3.4.5 Overcurrent protection

The current rating of protective devices for socket-outlets for supply to connectable electrical installations shall not exceed the current rating of the socket-outlet. The overcurrent device may be combined with the RCD protection required by Clause 2.4.6.4.

C.3.4.6 Protection against the ingress of moisture

Socket-outlets and associated protective devices shall be provided with a minimum degree of protection of IPX4. If socket-outlet enclosures are adjacent to fixed sprinkler systems, they shall have a minimum degree of protection of IPX5.

NOTE This requirement may be met by the service pillar's construction.

Exception: Service pillar switchboards in indoor locations need not comply.

C.3.4.7 Configuration and rating

Socket-outlets for the supply to connectable electrical installations shall comply with one of the following requirements —

(a) IEC 60309-2, with minimum rating 16 A; or

(b) AS/NZS 3112, with minimum rating 15 A.

C.3.4.8 Marking

The site marking required by Clause 2.4.5.5 shall be clear and indelible.

C.3.4.9 Control

Each socket-outlet shall have an individual control switch.

NOTE This function may be performed by the overcurrent protective device.

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C.3.4.10 Weatherproofing

The IP rating required by Clause 2.4.5.3 shall apply regardless of whether a plug is inserted into the socket.

C.3.4.11 Protection against earth leakage current

Socket-outlets for supply to connectable electrical installations shall be provided with protection against earth leakage current in accordance with Clause 2.4.6.5.

C.3.4.12 Strain relief

Strain relief shall be provided in accordance with Clause 2.4.5.7.

C.4 General purpose socket-outlets

Socket-outlets for general purposes, that are available for use by users of the caravan park shall be provided with protection against earth leakage current in accordance with Clause 2.4.6.5.

C.5 Testing of site supplies

C.5.1 Polarity of socket-outlets

Socket-outlets for supply to connectable electrical installations shall have the correct polarity.

Multiphase sockets shall have the same phase rotation.

RCDs providing earth leakage protection for socket-outlets for supply to connectable electrical installations shall be tested in accordance with AS/NZS 3000:2018 Section 8.

NOTE It is not required that the tripping time of the RCD be measured or recorded. The requirement is to ensure that the RCD operates, and that when it operates it disconnects all live conductors of the protected circuit.

C.5.2 Isolating transformers

Isolating transformers supplying socket-outlets for supply to connectable electrical installations shall be tested in accordance with AS/NZS 3000.

C.5.3 Earth fault loop impedance

The earth fault loop impedance shall be measured at each service pillar. It shall not exceed the maximum value detailed in AS/NZS 3017 for a 0.4 s disconnection time with the relevant protective device.

NOTE These tests are intended to reduce risk from touch voltage in the event of failure of the RCD. Operation of the RCD is not deemed acceptable.

C.6 General-purpose socket-outlets

RCDs protecting socket-outlets for general purposes, that are available for use by users of the caravan park, shall be tested.

C.7 Results of assessment

C.7.1 Assessment checklist

A record shall be made of all checks and tests carried out during the periodic assessment.

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An example of a checklist/test results form for a service pillar is shown in Figure C.1.

Service Pillar Checklist & test results form

(no copyright on this form)

Caravan Park: _____

Service pillar ID: _____ Date: / /

Supplied from: _____ Protection type and rating: _____ Submains EFLI: _____

Earthing system used:
- ☐ PEC plus pillar electrode (ECP 1:1993)
- ☐ PEC only (AS/NZS 3001:2001)
- ☐ PEC (min. 16 mm^2) (AS/NZS 3001:2008)
- ☐ PEC (min. 16 mm^2) plus supplementary earth electrode (this edition)

☑ = pass ☒ = fail ⊟ = n/a

Pillar condition

- ☐ No significant damage / corrosion
- ☐ Securely mounted
- ☐ Doors and covers securely retained and operate freely
- ☐ No risk of damage to supply leads
- ☐ If height < 1.5 m:
  - ☐ Device securely attached for increased visibility to drivers; and/or
  - ☐ A barrier to prevent vehicles from colliding with the pillar
- ☐ All socket outlets, switches, and protective devices readily accessible
- ☐ Suitable for the environment
- ☐ Service pillar ID marking clear
- ☐ Submain EFLI tested OK for 0.4 s (record above)

Socket outlets for supply to connectable installations number: _____

For multiple socket outlets, use relevant number of ticks/crosses (e.g ✓✓✗✓)

- ☐ Current rating of protective device(s) not greater than the current rating of socket-outlet
- ☐ Minimum IPX4. Except in indoor locations (IPX5 if adjacent to fixed sprinkler)
- ☐ IP rating maintained regardless of whether a plug is inserted into the socket

Config / rating either ☐ IEC 60309-2, min. 16 A; and/or

or ☐ AS/NZS 3112, min. 15 A

- ☐ "site" marking clear
- ☐ each has own control switch
- ☐ each provided with strain relief
- ☐ each provided with protection against earth leakage current
- ☐ RCD(s) tested ☐ by push button ☐ by RCD tester
- ☐ if supplied via isolating transformer ☐ tx tested:
- ☐ polarity correct
- ☐ standard phase rotation
- ☐ EFLI tested at each socket

General purpose socket outlets number: _____

- ☐ IP rating OK
- ☐ each provided with protection against earth leakage current

Figure C.1 — Service pillar checklist and test results form

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C.7.2 Record of assessment

On completion of a periodic assessment, a Record of Assessment (RoA) shall be completed. The RoA shall include all of the following:

(a) The NZ regulatory compliance mark (RCM).

(b) The name and location of the caravan park.

(c) A full description of all parts of the installation that were assessed.

(d) A list of all deficiencies identified.

(e) A statement that the issuer has carried out a periodic assessment in accordance with this Standard.

(f) If the assessment was carried out in accordance with a certified design; information identifying the certified design.

(g) A statement as to whether the installation is suitable for continued use.

(h) A date or dates by which each of the identified defects shall be remedied.

(i) The name and signature of the person who carried out the assessment.

(j) The practising licence type and number of the person who carried out the assessment.

(k) The date on which the assessment was completed.

(l) The date by which the next periodic assessment is due.

NOTE There is no requirement for full compliance with this Appendix before an RoA is issued. The RoA form is a means of providing formal advice to the owner or operator of the installation.

An example of a RoA form is shown in Figure C.2.

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RECORD OF ASSESSMENT

Caravan park details:

Client _____

Name and location of caravan park: _____

_____

_____

This Record of Assessment relates to the electrical installation in the caravan park.

Items assessed: _____

_____

_____

_____

Defects: _____

_____

_____

_____

_____

_____

☐ and as attached (___ pages attached)

Declaration:

I have carried out a periodic assessment of the above site in accordance with AS/NZS 3001.1; and

☐ The assessment was carried out in accordance with the following certified design:

_____

☐ I consider that the construction wiring assessed is suitable for continued use.

☐ The defects noted above should be remedied by the date(s) indicated.

Name of person who carried out inspection: _____

Registration type and number: _____

Signature: _____ Date: ____ / ____ / _____

NOTE: Periodic assessment must be carried out at intervals no greater than 5 years.

The next periodic assessment is required by: _____ / ____ / _____

Figure C.2 — Example of Record of Assessment (RoA) form

NOTE The record of assessment form is free of copyright and may be reproduced.

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Appendix D
(informative)

Typical caravan park/camping ground supply arrangements

Figure D.1 illustrates the typical supply arrangements at caravan parks or camping grounds.

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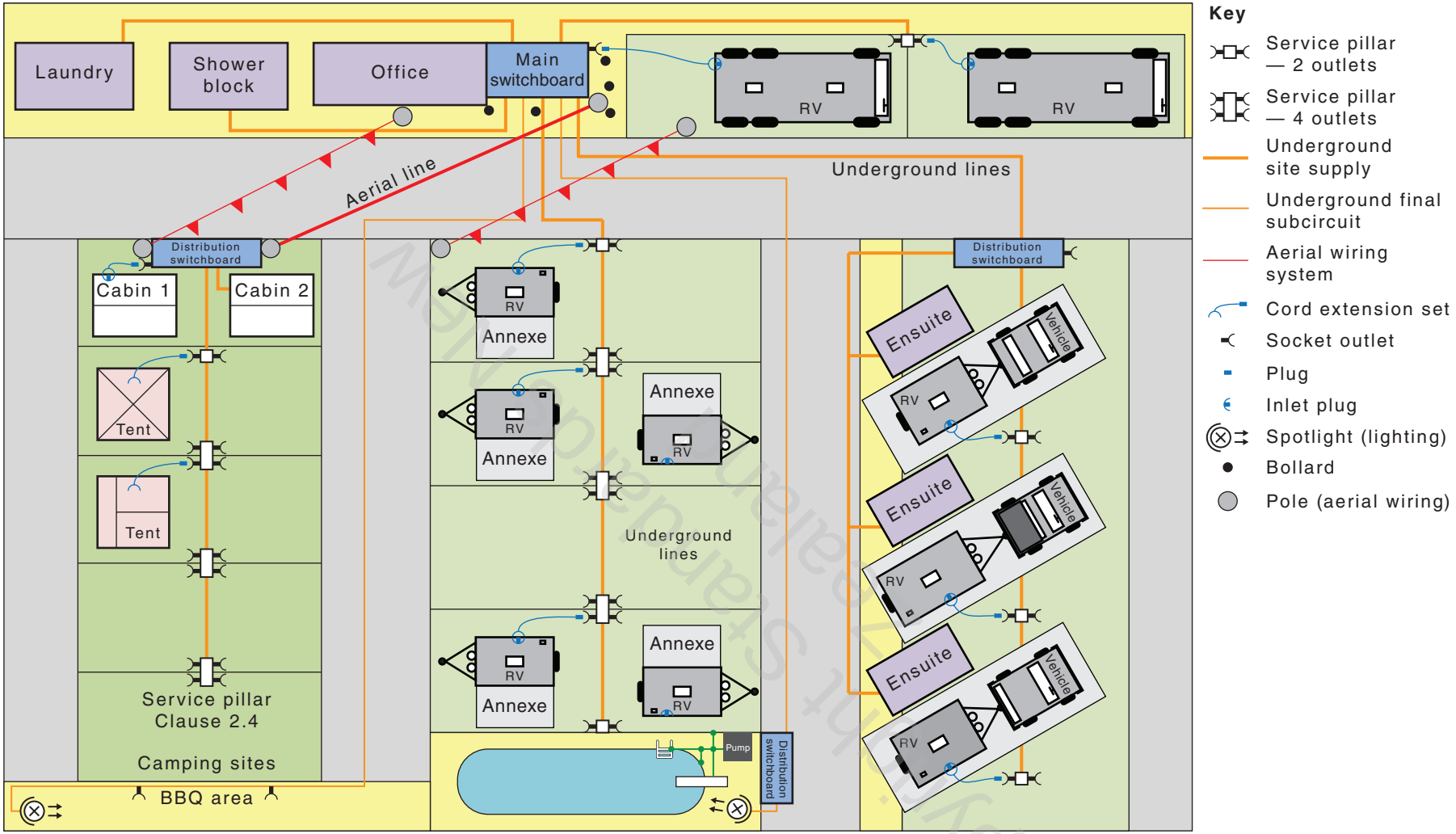


Figure D.1 — Typical caravan park/camping ground supply arrangements

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