be energy safe

Building safely near powerlines

Office of the Technical Regulator

For more energy information:

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To protect people and property, minimum safe clearances from powerlines have been established in the Electricity (General) Regulations 2012.

This brochure provides information on those clearances and tips on how to stay safe when building near powerlines.

This information is provided to offer general guidance only on building safely near powerlines, and does not purport to cover all situations, or any particular situation, or to outline a complete list of procedures that must be followed. It is not to be taken as a statement of law or legal advice, and must not be construed to waive or modify any legal obligation. The Government of South Australia will not be liable for any injury, damage or loss of any kind sustained by any person that arises directly or indirectly from reliance upon any information contained herein or source of information referred to.

Government of South Australia

Before you build near powerlines

Before starting work on your building you need to know and consider:

- the type of powerlines near the proposed building or structure – eg aerial, underground, high or low voltage.
- the amount of swing or sag of overhead powerlines.
- the location of the building or structure in relation to the powerline – allow enough space for a safe work environment, future structures or scaffolds and trees.

Scaffolding is considered a structure. In designing the building you should also allow for the width of any scaffold you may need to erect. This is to ensure that the scaffold may be positioned so that legal clearance distances are still met.

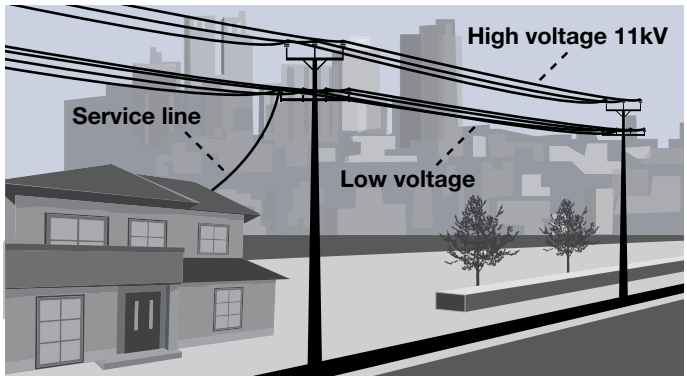

Image 1: Typical powerlines in built up areas

Safe clearance distances

The minimum safe clearance distances between buildings or structures and powerlines are set out in the Electricity (General) Regulations 2012. These distances are a legal requirement and must be maintained at all times.

A fence, sign or notice with a height of 2m or less is exempt from compliance with minimum clearance distances. However, they must not restrict safe access to powerlines for repair and maintenance. Gates may need to be installed to allow for truck access to the powerline. Locating a swimming pool under any powerline is not recommended.

The clearance distance, and how it is measured, depends on the voltage and type of powerline. Image 1 and 2 provide a general identification guide to determine the voltages of powerlines.

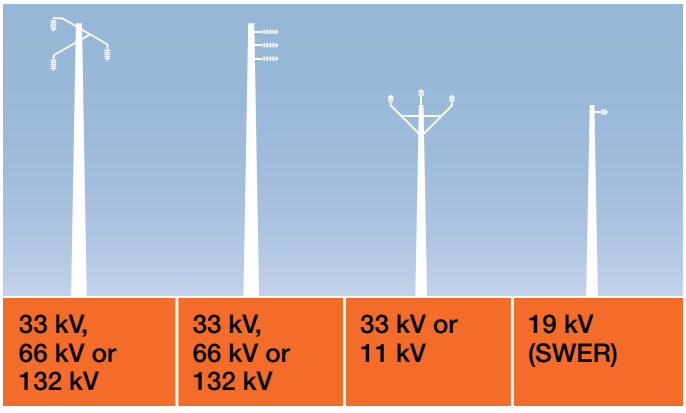

Image 2: Common powerlines in South Australia

Transmission powerlines – 132 kV or higher

When building near high voltage transmission powerlines (132 kV or higher), the safe clearance distance is measured horizontally from the centreline of the transmission tower.

Table 1: Minimum clearance distances from the centreline of transmission powerlines

Transmission line voltage	Minimum clearance
275 kV	25 m
132 kV (except single pole lines)	20 m
132 kV (single pole lines)	15 m

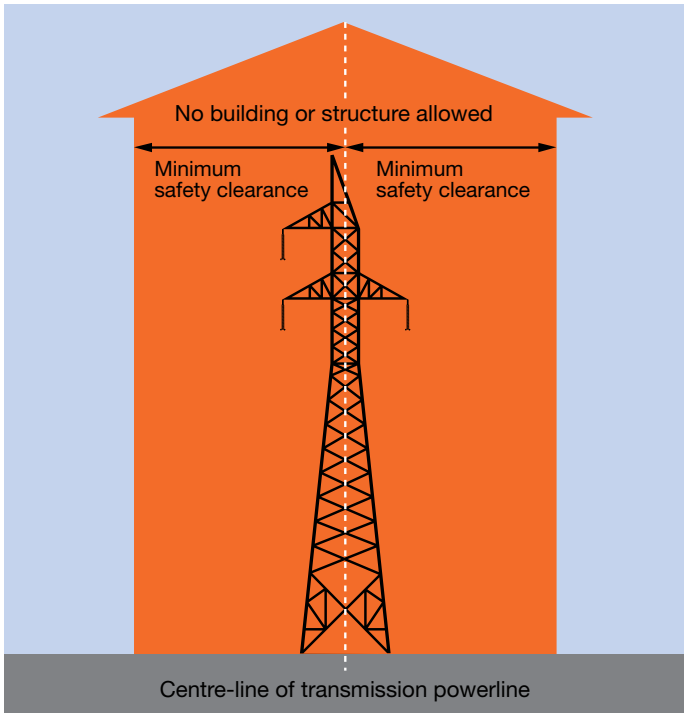

Image 3: Minimum safety clearance for transmission lines

Aerial distribution powerlines – 66 kV or lower

Clearance distances are measured from the point of maximum swing or sag of the powerlines.

To determine the safe clearance distance from aerial distribution lines (66 kV or lower) you need to consider the previous information and refer to Table 2 and Image 4.

You may need to relocate or insulate the powerlines. The cost of altering the powerlines should be negotiated with the electricity network operator, usually SA Power Networks (formerly ETSA Utilities), before the start of construction. Work is not to proceed inside the minimum clearance distance in anticipation of the powerlines being relocated.

Further information on the powerlines and their sag and swing can be obtained from SA Power Networks, the Office of the Technical Regulator or by visiting www.sa.gov.au/energysafe.

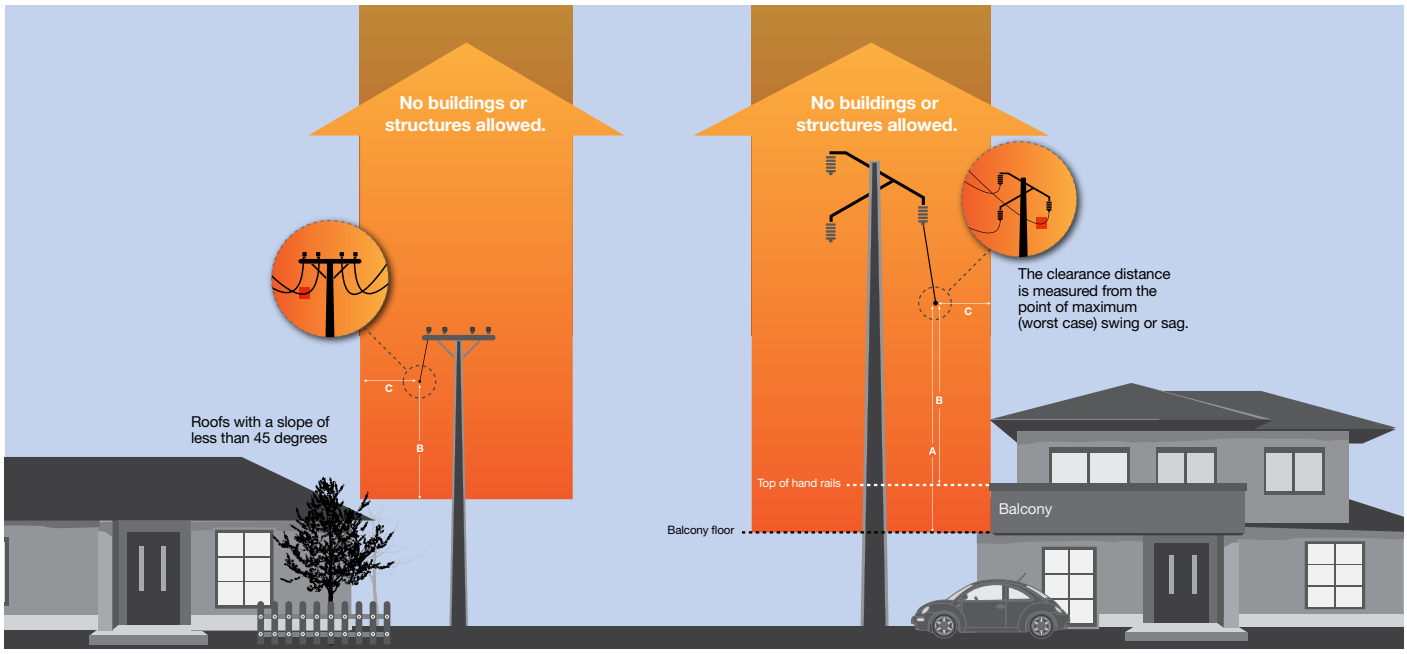

Image 4: Minimum clearances for buildings from powerlines

Table 2: Minimum clearances in metres from the nearest conductor at maximum swing and sag for distribution powerlines

Voltage	Up to and including 1 kV		Above 1 kV		Above 1 kV up to and including 33 kV	66 kV
Conductor type	Insulated	Bare	Insulated with earthed screen	Insulated without earthed screen	Bare or covered	Bare
Dimension A – Vertically above those parts of a building or structure normally accessible to persons.	2.7 m	3.7 m	2.7 m	3.7 m	5.5 m	6.7 m
Dimension B – Vertically above those parts of a building or structure not normally accessible to persons but on which a person can stand.	0.1 m	2.7 m	0.1 m	2.7 m	4.7 m	5.5 m
Dimension C – In horizontal direction from those parts of a building or structure normally accessible to persons or that is not normally accessible to persons but on which a person can stand.	0.1 m	1.5 m	0.1 m	1.5 m	3.1 m	5.5 m
Dimension D – In any direction from those parts of a building or structure not normally accessible to persons.	0.1 m	0.6 m	0.1 m	0.6 m	2.5 m	4.5 m

Planning approvals and powerlines

All development applications submitted to councils must include an Electricity Act Declaration Form, signed by the development applicant acknowledging that the development plans comply with prescribed clearance requirements.

It is the applicant's responsibility to ensure that the requirements of the *Electricity Act 1996* are being met.

Planning and development approvals issued by a council do not mean that the building plan complies with the minimum clearance requirements prescribed by the regulations.

Notes for Table 2

Vertical dimension A applies, for example, to balconies, terraces, walkways, bridges and scaffolds.

Vertical dimension B applies in relation to structures such as roofs with a slope of less than 45°, parapets wider than 0.1 m, pergolas and carports.

Horizontal dimension C applies to the same structures as A and B.

Horizontal dimension D applies in relation to structures such as roofs with a slope of 45° or more and light poles.

Your development must achieve either the appropriate horizontal or vertical clearance distance from the worst case position of the powerline to be compliant.

Powerlines (particularly 19 kV SWER, 33 kV and 66 kV) can sag considerably under high temperatures and loads, and also swing when it is windy. At mid span, a powerline will swing and sag considerably more than in areas near the pole.

The clearance distance is measured from the worst case swing and sag point. This may need to be calculated by SA Power Networks. SA Power Networks may charge a fee for this service.

Underground powerlines

Before excavating in areas with underground powerlines, you must contact SA Power Networks to find out the exact location and the type of the underground powerline.

Dial Before You Dig (www.1100.com.au) is a referral service that can assist in providing information on the location of underground powerlines and other services.

Minimum clearance distances must be met when building close to underground powerlines as shown in image 5 and table 3.

Where it is necessary to relocate an underground powerline to allow for the construction, the relocation costs must be negotiated and finalised with SA Power Networks before the start of the construction work. Work is not to proceed inside the minimum clearance distance in anticipation of the powerlines being relocated

If your property is supplied from an electrical service pillar or pit, you must not construct or place anything over or too close to it. This includes structures such as garages, retaining walls or moss rocks as they may restrict safe access to the service pit. Contact SA Power Networks for more information.

Table 3: Minimum safe clearances for underground powerlines

Underground powerline voltage	Minimum clearance distance
66, 132 and 275 kV	3 m
33 kV or less	2 m

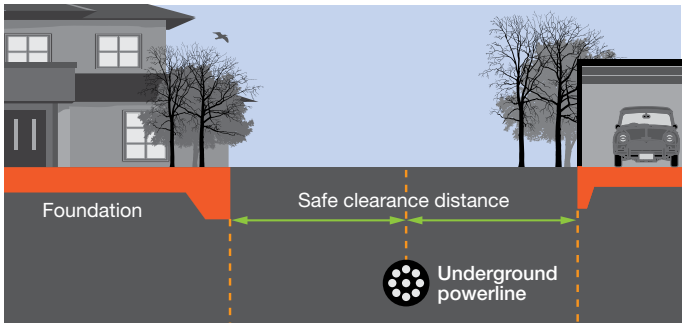

Image 5: Clearance distance for electricity supplier's underground powerlines

Permission to build inside the safe clearance zone

In limited circumstances where it is safe to do so, the Technical Regulator has powers to approve buildings and structures within the clearance distance.

Contact the Office of the Technical Regulator for further information.

Easements for powerlines

An easement is a legal right of use over the land of another person. In relation to powerlines, this means that the electricity network provider has legal permission to access and maintain the infrastructure.

There are different kinds of easements on properties containing powerlines. If a powerline existed on your property before the year 2000, the electricity network operator may have a statutory easement to access and maintain the powerline. This means that even if there is no registered easement on a property, the electricity network operator has the authority to access the powerline.

For new powerlines, the electricity network operator is required to register a new easement so it can access the electrical infrastructure on a private property.

Building near or on any easement should be discussed with the network operator (usually SA Power Networks).

Digging or excavating near stobie poles

Digging near stobie poles and other electrical infrastructure, such as padmounted transformer boxes, could present risks to your safety and the surrounding property. You could contact underground cables or destabilise the pole causing it to fall over.

If you intend to dig deeper than 30 cm within 3 m of a stobie pole, you are legally required to obtain a written permission from the electricity network operator.

It is also prohibited to alter the ground level directly under powerlines if this reduces the ground clearance to less than that prescribed by the regulations.

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