

be energy safe

# Building safely near powerlines

Office of the Technical Regulator



## Before you build near powerlines

Before starting work on a building, you need to consider:

- the type of powerlines near the proposed building or structure e.g. 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. When designing a building you should allow for the width of any scaffold you may need to erect. This is to ensure that the scaffold can be positioned in a way that legal clearance distances are met.

## Safe clearance distances

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

If a fence, sign or notice is lower than 2 metres, it may be exempt from minimum clearance distances. It must not restrict safe access to powerlines for repair and maintenance. You may need to install gates to allow trucks to access the powerlines. Always check with ElectraNet when considering fencing near transmission lines.

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 1: Typical powerlines in built up areas

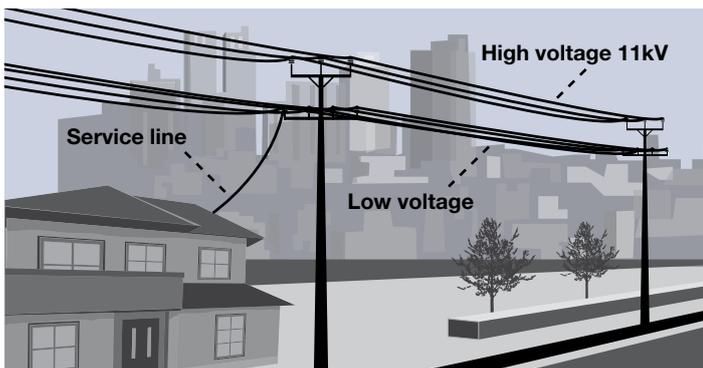
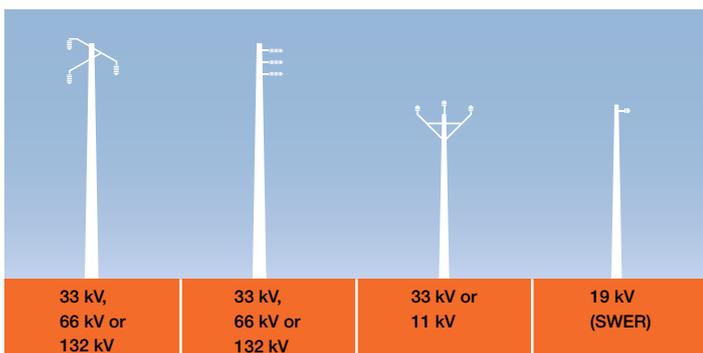


Image 2: Common powerlines in South Australia



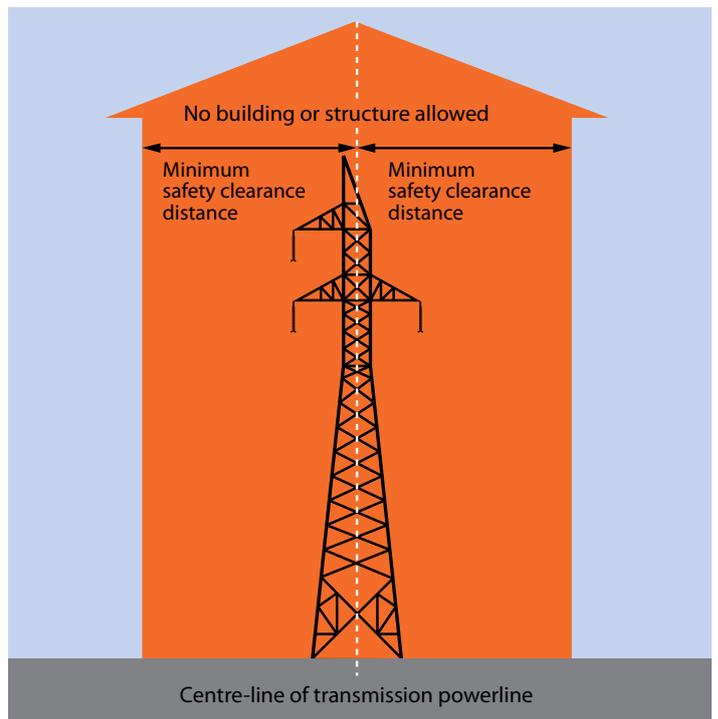
## Transmission powerlines – 132kV or higher

When building near high voltage transmission powerlines (132 kV or higher), the minimum safety clearance distance is measured horizontally from the centre line of the transmission powerline.

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

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

Image 3: Minimum safety clearance distance for transmission lines



## Aerial distribution powerlines – 66kV 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), refer to Table 2 and Image 4.

If you need to relocate or insulate the powerlines, the associated costs and work should be negotiated with the electricity network operator, usually SA Power Networks, before starting construction. Construction work must not proceed inside the minimum safety clearance distance until the powerlines are relocated.

Further information on powerlines and their sag and swing is available from SA Power Networks, the Office of the Technical Regulator or by visiting [sa.gov.au/energysafe](http://sa.gov.au/energysafe).

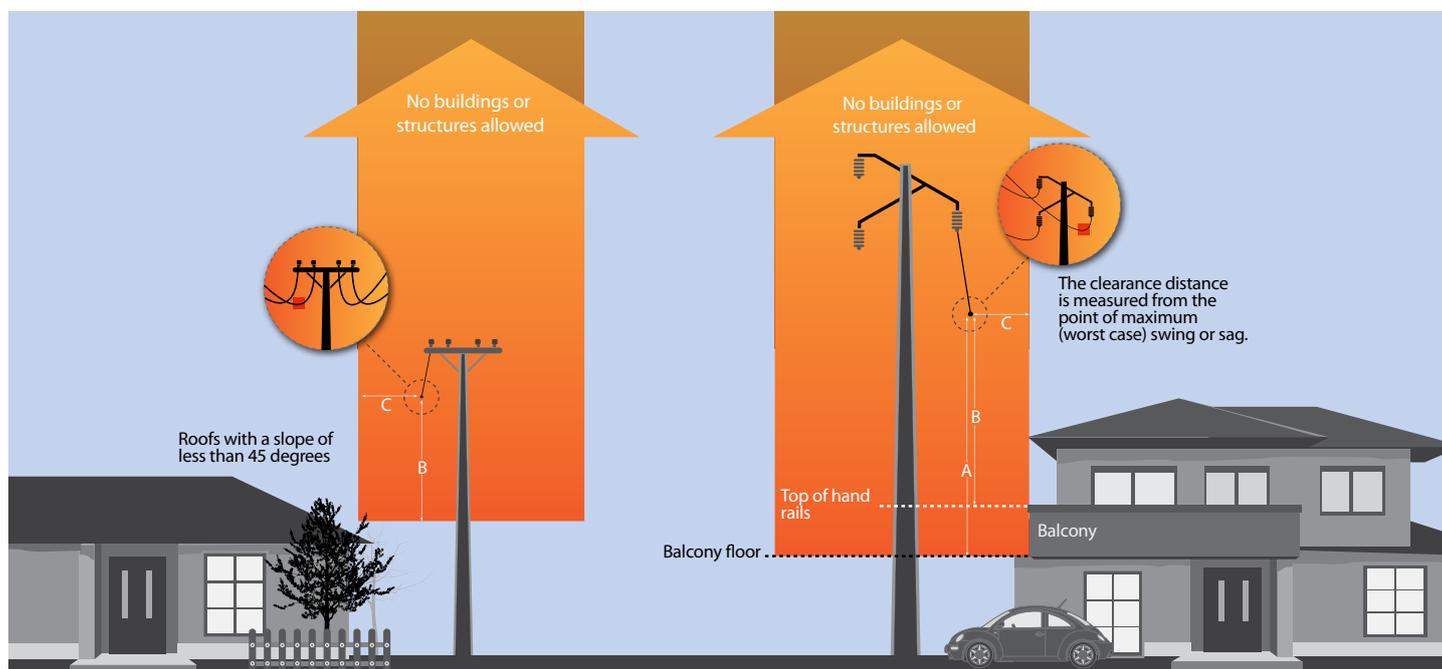
Table 2: Minimum safety clearance distances (in metres) from the nearest conductor at maximum swing and sag for distribution powerlines

Voltage	Up to and including 1 kV		Above 1 kV		Above 1 kV up to and including 33 kV	66 kV
	Insulated	Bare	Insulated with earthed screen	Insulated without earthed screen	Bare or covered	Bare
<b>Dimension A</b> – 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
<b>Dimension B</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	2.7 m	2.7 m	4.7 m	5.5 m
<b>Dimension C</b> – 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	1.5 m	1.5 m	3.1 m	5.5 m
<b>Dimension D</b> – 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

**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 metre, pergolas and carports.
- Horizontal dimension C applies to the same structures as A and B.
- Radial 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 much 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.

Image 4: Minimum safety clearance distances for buildings from powerlines



## Planning approvals and powerlines

All development applications submitted to councils must include an Electricity Act Declaration Form, signed by the development applicant, acknowledging 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.

The council is not obligated to check the clearance distances to powerlines in your plans. 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.

## 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](http://www.1100.com.au)) is a referral service that can help with obtaining information on the location of underground powerlines and other services.

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

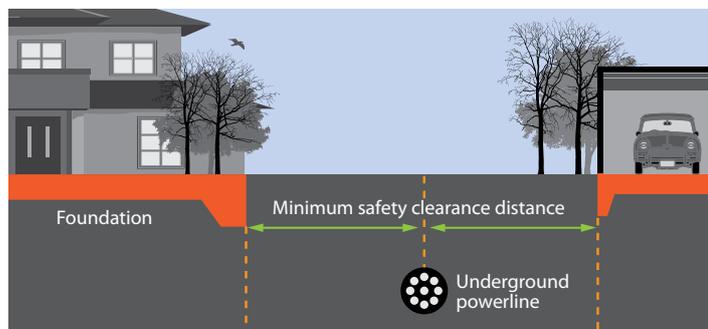
Where it is necessary to relocate an underground powerline, the relocation work and costs must be negotiated and finalised with SA Power Networks before starting construction. Construction work must not proceed inside the minimum safety clearance distance until the powerlines are relocated.

If a 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 safety clearance distances for underground powerlines

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

Image 5: Minimum safety 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 minimum safety 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 there is a powerline on your property, the electricity network operator may have a statutory or registered easement to access and maintain the powerline. Even if there is no statutory or registered easement on a property, the electricity network operator has the authority, at any reasonable time, to inspect the powerline and take action to prevent or minimise an electrical hazard.

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 may make contact with underground cables or destabilise the pole, causing it to fall over.

If you intend to dig deeper than 30cm within 3 metres 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 it reduces the ground clearance to less than prescribed by the regulations.

*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.*

## For more information

**Online:** [sa.gov.au/energysafe](http://sa.gov.au/energysafe)

**Email:** [dsd.otr@sa.gov.au](mailto:dsd.otr@sa.gov.au)

**Phone:** 08 8226 5500



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South Australia