Fact sheet: Fencing near TasNetworks Transmission Lines

This fact sheet outlines the requirements for safely installing and maintaining fences located near TasNetworks overhead transmission lines.

All fences installed within TasNetworks transmission easements should be built from timber or other non-conductive materials to minimise the risk of injury to people and/or livestock. We understand this is not always possible and fences containing metal components (such as metal wire and/or metal posts) may be required. In these situations there are specific requirements that need to be met as outlined in this fact sheet.

Fences constructed entirely from timber (e.g. timber posts with timber slats) or any other non-conductive materials are exempt from the requirements outlined below.

Risks posed by metal fences within transmission easements

Metal fences can act as a conductor of electricity. Potentially dangerous voltages can be transferred along metal fences installed within transmission easements, even to areas outside the transmission easement. This is due to the transmission line inducing or transferring a voltage onto the fence.

Induced voltages occur when the fence is constructed nearby and parallel to the transmission line.

Transferred voltages occur when the fence is constructed close to a transmission tower or pole.

The amount of induced or transferred voltage varies depending on the type of transmission line, the distance between the line and the fence and other factors such as soil type and the presence of buried pipelines.

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Measures to reduce induced or transferred voltage

There are a number of measures which can be taken to reduce the amount of induced or transferred voltage, including:

- Connecting the fence to the ground, this is known as 'earthing' and keeps the metal fence at the same voltage potential as the ground;
- Splitting up long continuous runs of metal fence into smaller sections by installing insulated sections of fencing wire or installing panels constructed entirely from non conductive materials (commonly called an 'isolation panels'); or
- Relocating the fence outside the transmission easement.

The risk of a voltage being induced into a parallel fence is reduced as the distance between the transmission line and the metal fence is increased. However, earth rods should still be considered for fences located outside the transmission easement as this will further reduce the risk. In this instance one earth rod installed adjacent to each transmission structure for the entire length of the parallel section is adequate.

For a wire fence, ensure the wires are connected together using vertical metal droppers which are then earthed to the ground using a metal stake or rod. Do not rely on metal fence posts to earth the fence.

Requirements for electric fences

Electric fences running both perpendicular and parallel should be kept as far as practicable from the transmission structure/line. It is strongly recommended that landholders contact TasNetworks regarding their proposed electric fencing arrangement prior to its installation so that technical advice can be provided.

When the fence is de-energised either during installation, maintenance or relocation activities a temporary earth must be installed at regular spacing along the fence for the entire length of the parallel section.

Requirements for temporary fencing

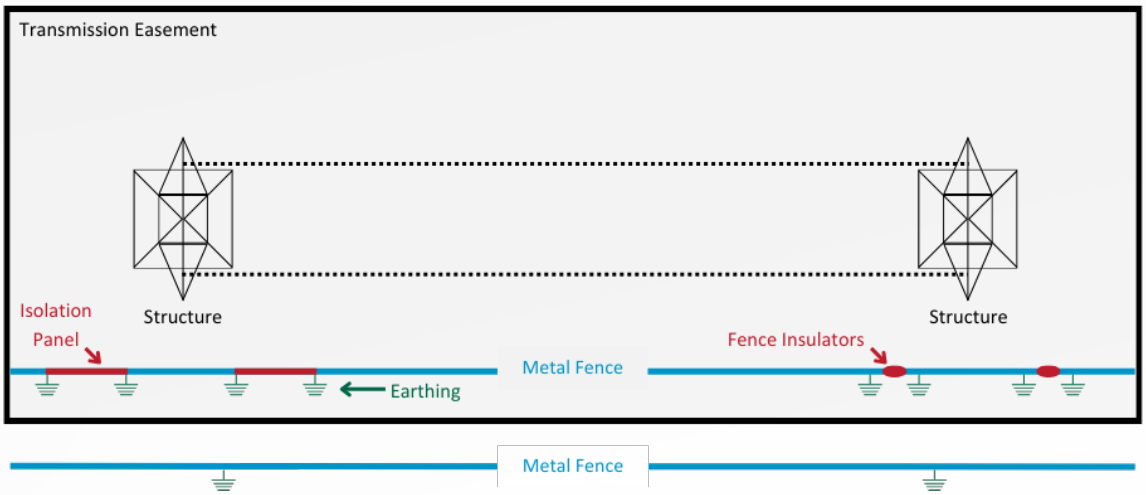
Temporary fences installed within the transmission easement must adhere to all the requirements set out in this fact sheet.

In addition to the requirements in this fact sheet, panel fences supported by concrete or plastic blocks also must adhere to the below requirements:

- Every second panel must be earthed; and
- All clamps or couplings between panels must be non-metal.

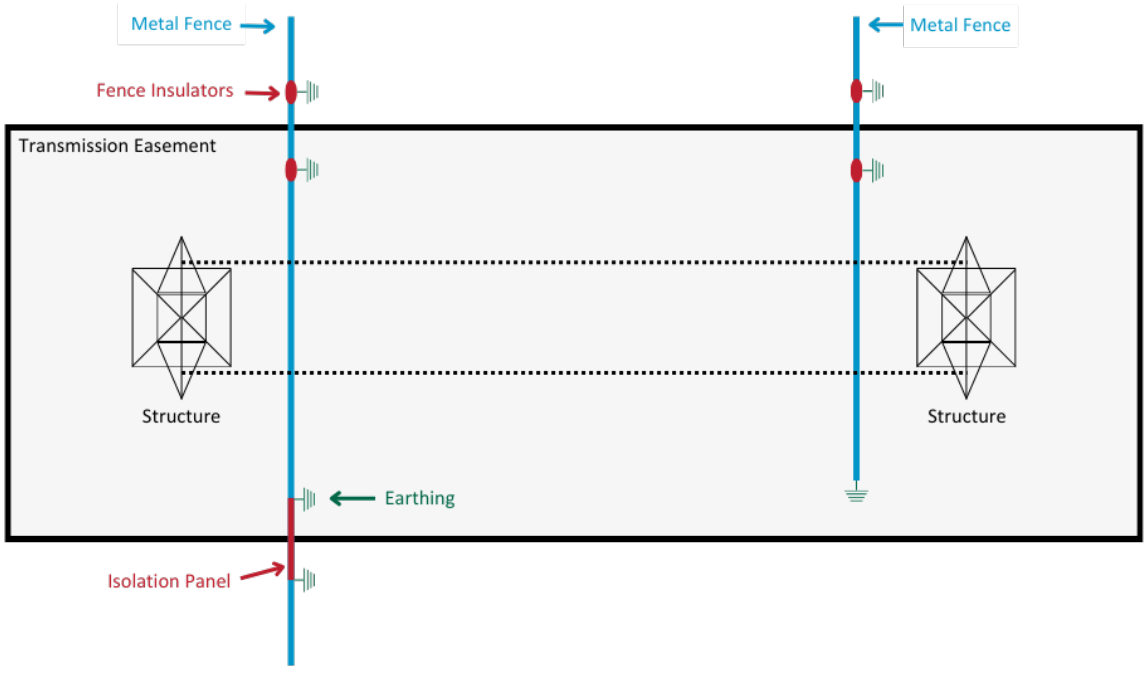
Requirements for metal fences parallel to transmission lines

- Install isolation panels, which are earthed at each end, where the fence runs within 10m of a transmission structure;
- Earth the fence at periodic intervals whilst it is parallel to the transmission line; and
- Earth the fence at each end.



Requirements for metal fences crossing a transmission line easement

- Install isolation panels where the fence enters and exits the easement, these panels must be earthed at each end; and
- When the fence ends within the easement, the last post must be earthed.



For more information

To find out more please contact
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Or write to us at: PO Box 606 Moonah TAS 7000.

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