



Technical Bulletin

TB 0214 – Design parameters for lines in subalpine areas

Purpose

To align and clarify design requirements for lines constructed in subalpine areas that are subject to ice or temperatures below freezing.

Background

It has been identified that different criteria and parameters have been in use by different work groups when designing lines in locations subject to cold and ice conditions.

It is important that due consideration be given to loads that result from extreme temperatures and the potential build-up of ice. Failure to do so can result in broken conductors and pole failures.

Requirements have been drawn from AS/NZS 7000, AS/NZS 1170.3, as well as local knowledge and history of failures.

Actions

Overhead distribution and transmission lines in the areas described must be designed using the parameters set out in the table below.

Where a line traverses more than one region, all spans/poles within a tension section (i.e. between strain points) must be designed to the more onerous requirement that applies to any of the spans/poles within that tension section.

Load cases and locations

The cold load case must be applied in locations with elevation above 500m. This corresponds approximately to the Blue Mountains starting at Linden, as well as the Southern Highlands.

Ice loading must be applied in areas with elevation over 900m. Sodwalls and Tarana (elevation ~850m) are also known to experience icing.

The standard/everyday temperature to be used in all locations is unchanged at 5°C.

Where local experience indicates considerably better or worse climatic conditions due to factors such as local topography, Primary Systems may approve a variation from these requirements on a case-by-case basis. A dispensation form must be submitted along with supporting information.

Impacted Standards

The contents of this technical bulletin will be included in the next update of the following standard(s):

- **MDI 0031** – Overhead distribution: Design standards manual
- **MDI0047** – Overhead transmission mains design

Elevation	Cold load case		Ice load case			
	Temp (°C)	Wind pressure (Pa)	Temp (°C)	Wind pressure (Pa)	Radial ice thickness (mm)	Ice density (kg/m ³)
Above 900m	-10	0	-5	100	6	916
500m to 900m	-5	0	N/A			
Below 500m	5	0	N/A			