

2.4 Definitions

2.4.1 Hazard Zone

The "Hazard Zone" is defined as an area in the vicinity of an overhead electricity line which must normally be isolated from the work site by the use of physical barriers, in order to minimise the risk of accidental contact or near contact with the overhead line by plant,

equipment, scaffolding or other materials while carrying out construction work – see Fig 2 below. The dimensions of the Hazard Zone are related to the voltage of the overhead line.

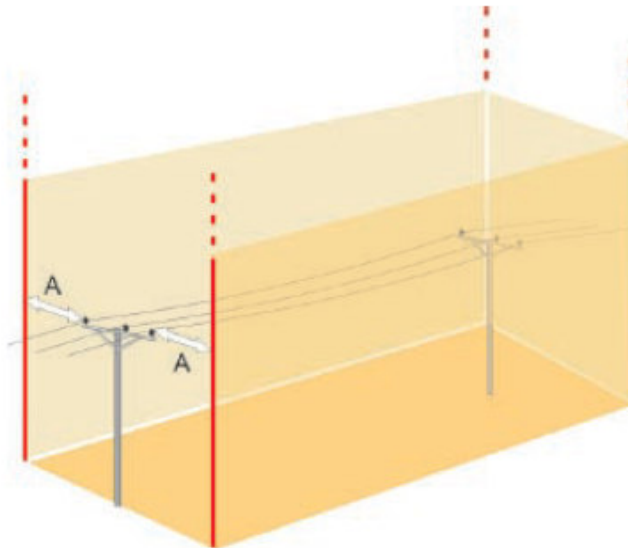


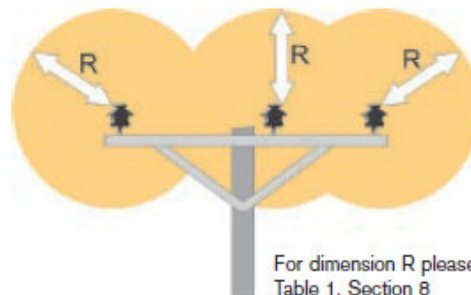
Fig 2. Hazard Zone

For dimension A please see Figs 5 and 6

2.4.2 Exclusion Zone

An "Exclusion Zone" is defined as a region around a live overhead electricity conductor which **must never be breached** in order to avoid electrical arcing or flashover. The concept of the Exclusion Zone around the 3 conducting wires of a single pole overhead line is illustrated in Fig 3.

The dimension "R" of the Exclusion Zone is related to the operating voltage of the overhead electricity line. The Exclusion Zones for Operating Plant (such as cranes, concrete placing booms, excavating equipment, mobile elevating work platforms (MEWPs), and other plant and materials) are specified in Table 1, Section 8.



For dimension R please see Table 1, Section 8

Fig 3. Exclusion Zone

2.4.3 No-Tip Zone

A "No-Tip Zone" is defined exclusively in the context of road strengthening and resurfacing works such as the Tarring and Chipping of existing roads. It is defined as the area within which no part of a "tipped truck" or other raised equipment may enter. See Figures 7, 7a and 7b for further details.

2.4.4 Crossing Point

A "Crossing Point" is a demarcated corridor crossing under an overhead electricity line with height restricted "Goalpost" type barriers and "Danger Warning Signs" at both the entry and exit positions of the crossing passageway. It is designed to limit both the location and the height of plant that can cross under the line to that of a safe height, as determined by the design of the goalposts and to alert the drivers/operators of vehicles and plant of the hazard of the overhead line before crossing under it. See Fig 6 for further details.

2.4.5 Voltage Levels

LV denotes Low Voltage which means any alternating current where the voltage is less than or equal to 1000 volts (1kV).

HV denotes High Voltage which means any alternating current where the voltage is greater than 1000 volts (1kV)

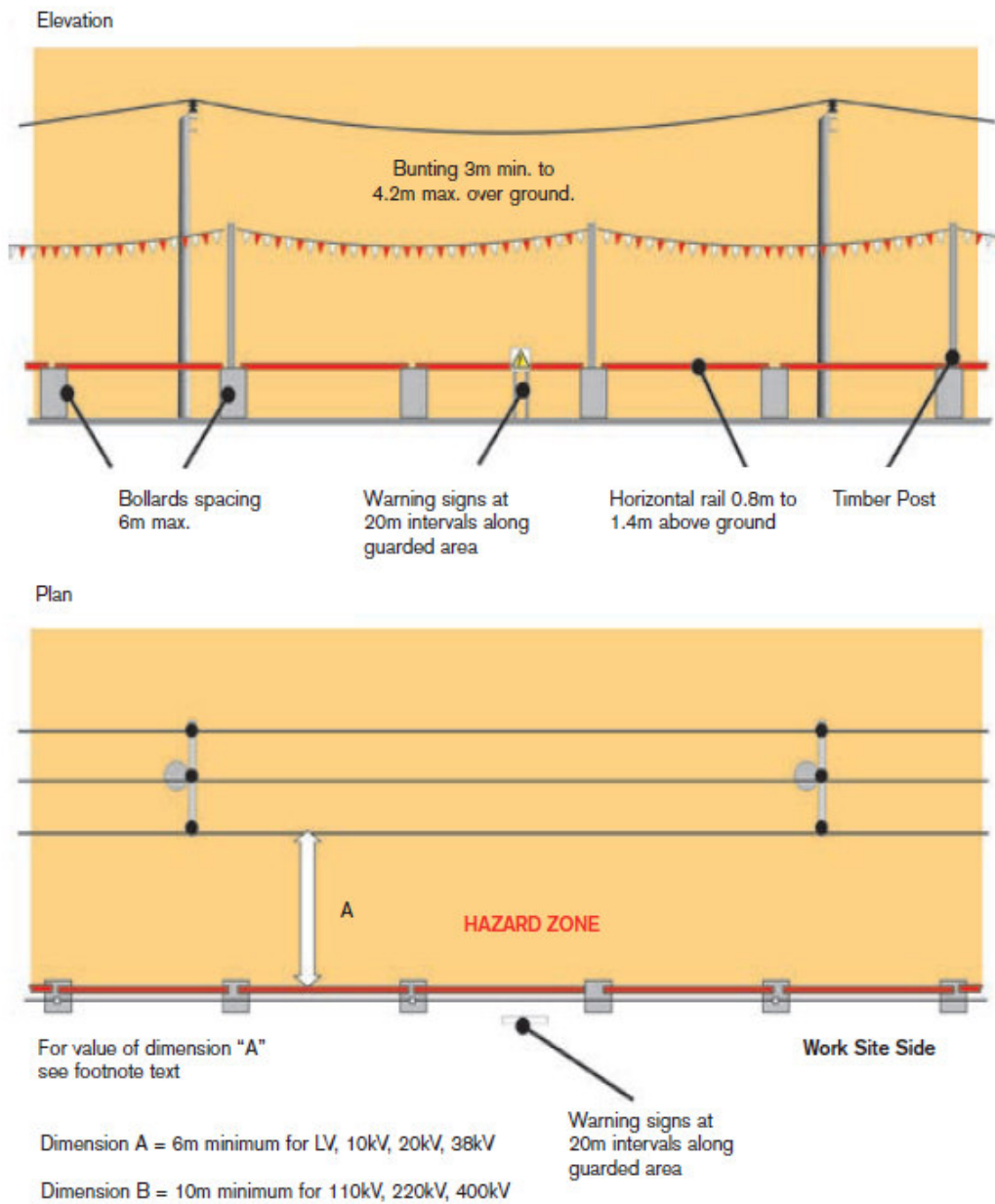
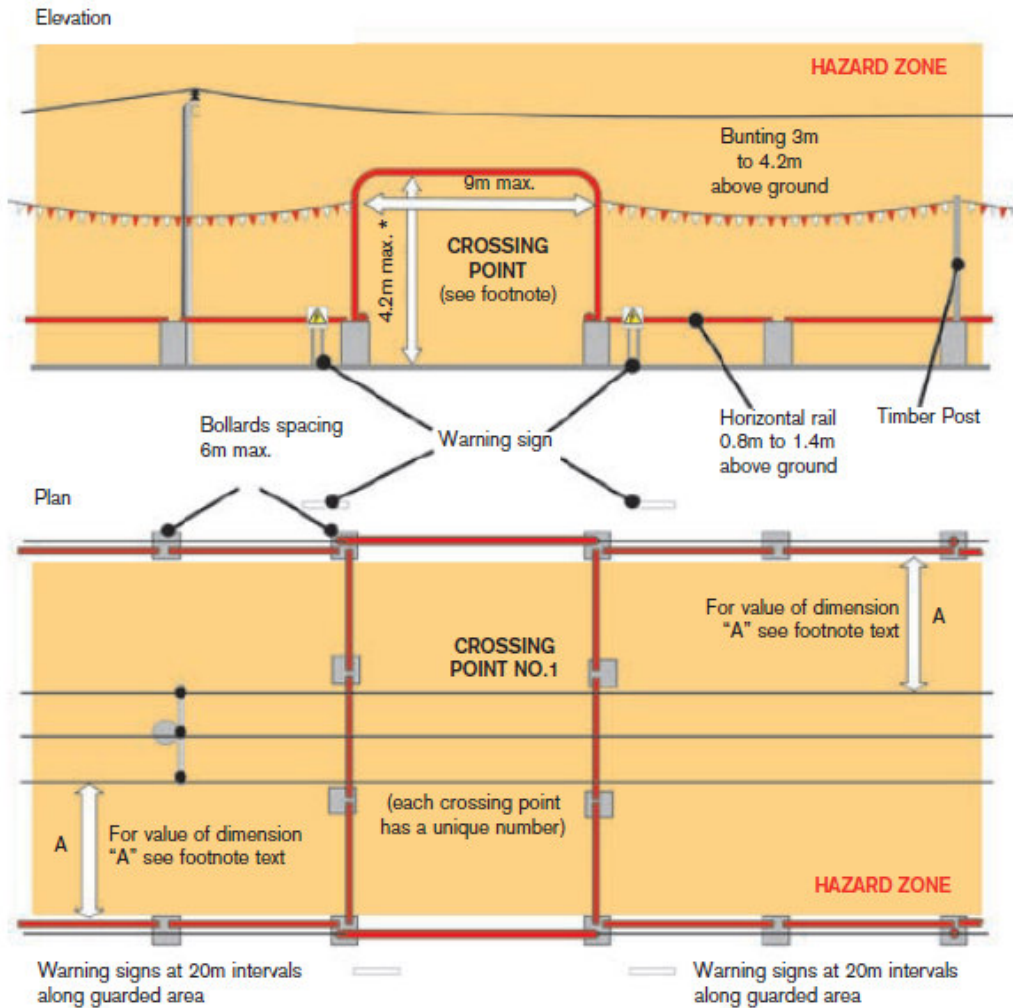


Fig 5. Site where Plant will not pass under power lines



Dimension A = 6m minimum for LV, 10kV, 20kV, 38kV

Dimension A = 10m minimum for 110kV, 220kV, 400kV

Fig 6. Site where Plant will pass under power lines

* At the crossing portal, maximum height of crossbar must not exceed 4.2m except where it has been specifically approved by ESB Networks for that particular crossing location. This height must be measured relative to the original site ground levels.

TABLE 1 - EXCLUSION ZONES IN METRES FOR OPERATING PLANT NEAR OVERHEAD ELECTRICITY LINES

Nominal Phase to Phase Voltage of Overhead Line	Exclusion Zone (metres)
Insulated LV conductors in consultation with ESB Networks <i>(Insulation to be verified in all cases by ESB Networks prior to the commencement of the work)</i>	1.0
Bare LV and bare and covered 10kV, 20kV & 38kV	3.0
110kV	4.5
220kV	6.0
400 kV	8.0

8.4 Critical Safety Requirements on Exclusion Zones for Overhead Electricity Lines

A person must not operate any crane or any other plant or equipment in a way that any of the following comes within or breaches the Exclusion Zone(s) as specified in Table 1 above:

- any part of the crane or plant
- the load being moved
- a person operating or working in a mobile elevating work platform (MEWP)
- any hand tools or other equipment held by any person involved with the operation.

8.5 Risk Assessment at a Work Site with Overhead Electricity Lines

In situations where a hazard involving Overhead Electricity Lines has been identified, the contractor must ensure that a site specific written Risk Assessment and Work Method Statement is prepared to determine the risk of breaching the Exclusion Zone and the control measures necessary to manage that risk.