

Overhead Electricity Lines Tuesday 19th October 2022

People are killed and injured each year by accidental contact or near contact with overhead electricity lines. Most of these involve:

- Cranes or excavators
- Tipping trucks or truck mounted cranes
- Mobile extendable machinery
- Scaffolding, gutters, ladders

Hazards of Electricity

- Contact with electricity can cause death or serious injury
- Exposure to 'live' electricity can be through direct or indirect contact
- Equipment is 'live' in the normal state and external parts may become 'live' due to a fault or equipment damage
- Electricity can be an ignition source



Working directly beneath or close to overhead electricity lines is extremely hazardous and requires special control measures to be put in place especially when operating plant and equipment. These controls may include but are not limited to:

- Submitting a request to the ESB to Switch out the electricity
- Operating a permit system
- Implementing exclusion zones
- Installing height restrictors on plant/machinery

All overhead electricity lines should be presumed 'live' until confirmed 'dead' by ESB.

Working near overhead electricity wires is extremely dangerous due to the possibility of either electrical arcing or direct contact with the overhead electricity lines.

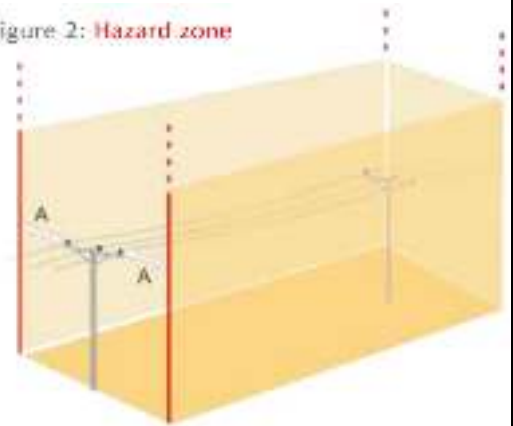
Arcing occurs when electrical current jumps across an air gap and flows through the gap from the source of electrical power to another object or body nearby. The size of the gap that electrical current can jump depends on many factors. The most relevant factors are:

- the voltage of the source of electrical energy;
- the level of moisture and other impurities in the air gap; and
- the nature of the object or body at the non-energised side of the gap and how well it is insulated from earth.

Hazard Zone

This is a lateral area near overhead lines which must be isolated from the work site with physical barriers. This minimise the risk accidental contact or near contact with the overhead line and plant/machinery. There are exceptions to this when working on the system and when power outages are arranged. ESB Safety Rules 2022 must be followed.

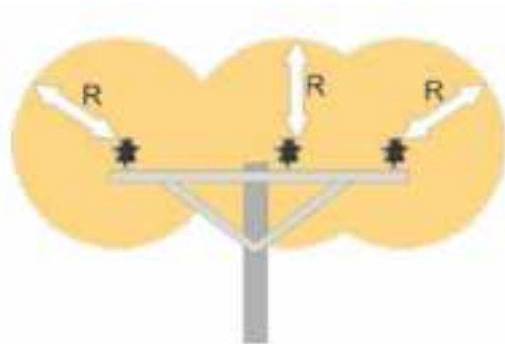
Figure 2: Hazard zone



Nominal phase-to-phase voltage of overhead line	Minimum horizontal distance (A) in metres
LV, 10kV, 20kV and 38kV	6.0
110kV, 220kV, 400kV (and other voltages in this range)	10.0

Exclusion Zones

Exclusion zone is a region around a live overhead electricity line which must never be breached in order to avoid electrical arcing or flashover. The dimension R of the exclusion zone is determined by the operating voltage of the overhead electricity line. The exclusion zones for operating plant and machinery and materials are specified in the table.



Voltage of Overhead Line	Exclusion Zone (R)
Insulated LV – ABC	1.0m
Uninsulated LV	3.0m
10kV, 20kV & 38kV	3.0m
110kV	4.5m
220kV	6.0m
400kV	8.0m

Safety Advice

Minipillars & Underground Cables

- **Do NOT** approach any victims in contact or close contact with damaged minipillars or cables
- **Do NOT** approach or touch damaged minipillars or cables
- **Do NOT** approach vehicles or equipment in contact or close contact with damaged minipillars or cables



Transformer & Switching Sub-Station

- **Do NOT** approach any victims in contact or close contact with equipment
- **Do NOT** enter any station unless accompanied by ESB Networks personnel
- **Do NOT** ignore hazards including exposed live parts, oil, compressed air, SF6 gas



Fallen Wires

- **Do NOT** approach any victims in contact or close contact with electricity wires or equipment
- **Do NOT** approach or handle fallen wires
- **Do NOT** approach vehicles or equipment in contact or close contact with electricity wires



For general information or advice on dealing with overhead electricity line conflicts:

call 1800 372 757 or email esbnetworks@esb.ie



CAUTION Always assume the electricity network is live.
In an emergency contact ESB Networks immediately.

Emergency Contact No.
24 Hour/7 Day Service
1800 372 999

