

Electricity on Site

Temporary supplies, portable equipment and overhead lines

Scope and limitations — read before use

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1. The basic rules

Rule	Why
110V centre-tapped earth for portable tools on construction sites	Reduces the voltage to earth to 55V, which greatly reduces the severity of a shock. This is the industry standard and inspectors expect it.
Battery tools where practicable	No cable, no shock risk, no trip hazard.
RCD protection where 230V is unavoidable	Provides fast disconnection, but is a backup, not a substitute for the right voltage.
Never use damaged cables or taped repairs	Taped joints in a wet site environment are a common cause of shock and fire.
Cables routed to avoid damage and trips	Overhead on hooks, or protected in ramps. Not across walkways or through doorways.
Only competent people work on electrical systems	Live working is very rarely justified and requires specific control.

2. Overhead power lines

Contact with overhead lines kills. Electricity can arc across a gap, so contact is not necessary. This applies to excavators, telehandlers, MEWPs, tipper bodies, scaffold tube and ladders.

- Survey the site and identify every overhead line before work starts.
- Consult the line owner. They may be able to divert, de-energise or insulate.
- Maintain the exclusion distance: machine maximum height and reach plus 9 metres from lines on wooden poles, and plus 15 metres from steel pylons, unless the line owner specifies otherwise.
- Mark exclusion zones with goalposts, bunting and barriers at the physical limits.
- Brief every operator and every delivery driver. Tipper bodies raised under a line are a recurring cause of death.
- If a machine does contact a line: stay in the cab, warn others to keep away, try to drive clear. If you must leave, JUMP well clear landing with both feet together and hop or shuffle away. Never step down touching the machine and the ground at once.

3. Underground cables

See CON-07. Plans, CAT and genny, mark, trial holes, hand dig near the service.

4. Site electrical inspection record

Item	Location	Type / voltage	Last inspection	Next due	Condition	Action

5. Portable appliance inspection

Frequency should follow the risk. On construction sites, 110V portable tools are commonly inspected formally every 3 months, with a user check before every use. Set your own intervals from the risk and record them.

Tool ID	Description	Voltage	User check done	Formal inspection date	Next due	Pass / Fail

Assessed by	Signature	Date	Review date
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