ELECTRICAL SAFETY ON SITE

A Supervisor's Safety Guide | RK SAFETY Workplace Safety Series

This is Guide 4 of 5 in the RK SAFETY Workplace Safety Series — download the full series at ***https://rksafety.co.za/safety-resources/***

Why This Risk Matters

Electricity is invisible, silent, and unforgiving. An electrical fault or unsafe act can result in electrocution, severe burns, or trigger a fire or explosion in seconds. On South African construction sites and in industrial facilities, electrical incidents remain one of the most underreported yet most severe categories of workplace harm.

The human cost extends beyond the immediate victim. Electrical burns are among the most painful and disfiguring injuries a person can sustain. Survivors often face months of hospitalisation, multiple surgeries, and permanent disability. Families are left managing the trauma of a life altered irreversibly — all because of a cable that was not properly isolated, a panel that was not locked out, or a task that was rushed.

South Africa does not currently publish consolidated, sector-specific electrical fatality statistics — electrical incidents tend to be absorbed into general workplace accident categories in Department of Employment and Labour reporting, making the true scale of this risk invisible in the data. In the United Kingdom, where the Health and Safety Executive (HSE) tracks electrical incidents under its RIDDOR system, 7 worker fatalities and approximately 150 serious non-fatal electrical injuries were recorded in 2024/25. (Source: HSE RIDDOR data, 2025 — international data used for illustrative purposes.) South Africa's infrastructure age, the prevalence of temporary site installations, and the widespread use of unqualified labour in electrical tasks creates a risk environment that warrants at least equivalent vigilance — if not greater.

Most Common Causes of Incidents

- Live work performed without lockout/tagout procedures
- Use of damaged, improvised, or non-compliant electrical equipment
- Inadequate earthing or lack of earth leakage protection
- Overloaded circuits and use of multi-adaptors
- Work near overhead power lines without exclusion zones
- Unqualified persons performing electrical installations or repairs
- **Wet conditions —** working with electrical equipment in rain or flooded areas
- Failure to test for voltage before working on electrical systems

What South African Law Requires

Electrical safety in South African workplaces is governed by the OHS Act and the Electrical Installation Regulations (2009), as well as the Construction Regulations (2014):

- The Electrical Installation Regulations require that all electrical installations, alterations, and repairs be carried out by a registered electrician holding a valid wireman's licence appropriate to the scope of work.
- The OHS Act (Section 8) places a general duty on employers to identify and control electrical hazards as part of their overall health and safety system.
- The Construction Regulations require that a competent person manage all electrical installations on construction sites, and that temporary electrical systems comply with SANS 10142.
- **Lockout/Tagout procedures are mandated under the General Safety Regulations —** no work may be performed on live electrical equipment unless there is no alternative, and even then, specific controls must be in place.
- Electrical equipment used on site must carry proof of compliance with SANS standards and must be maintained in safe working condition.

Step-by-Step Prevention Checklist

1. **Implement a lockout/tagout system for all electrical maintenance —** Before any work on electrical equipment, the circuit must be de-energised, locked out, and tagged by the responsible person. Verify dead before you touch.
2. **Only authorised, qualified persons may perform electrical work —** Verify credentials before assigning any electrical task. Using unqualified workers to carry out electrical work is a criminal offence under the OHS Act.
3. **Conduct regular inspections of all electrical equipment —** Extension cords, tools, distribution boards, and temporary installations must be inspected regularly. Damaged equipment must be immediately removed from service.
4. **Install and test earth leakage circuit breakers —** All circuits must be protected by earth leakage protection. Test RCDs monthly and log the results. Never bypass or remove this protection.
5. **Establish exclusion zones around overhead power lines —** Where work is conducted near overhead lines, demarcate exclusion zones in line with Eskom or local authority guidelines. No plant, machinery, or scaffolding may breach these zones without formal approval.
6. **Prohibit electrical work in wet conditions —** No electrical connections, repairs, or installations may be performed in rain, in flooded areas, or on wet surfaces. This applies to temporary site installations as much as to permanent systems.
7. **Maintain an up-to-date electrical register —** All electrical equipment on site must be listed, inspected, and tracked. Include inspection dates, responsible person, and condition notes.
8. **Train workers to recognise and report electrical hazards —** Workers do not need to be electricians to identify a frayed cable, a warm switchboard, or a circuit breaker that trips repeatedly. Encourage reporting and never penalise it.
9. **Conduct formal electrical risk assessments —** Every area where electrical work is performed or where electrical exposure exists must be assessed. Update assessments annually or after any change in site conditions.
10. **Prepare and practise an electrical emergency response plan —** Workers must know what to do when someone has been electrocuted: do not touch the casualty, isolate the power, call for emergency services, and apply CPR if trained and the scene is safe.

> **KEY TAKEAWAY:** *Electrical safety is not a specialist concern — it is everyone's business. Supervisors do not need an electrician's licence to enforce a lockout/tagout system, to spot a damaged extension lead, or to ensure that unqualified workers are kept away from electrical panels. These daily acts of vigilance, underpinned by proper training and clear procedures, are the safe way forward in every electrical environment.*