



Electrical Safety in Construction

Newcastle Construction Safety Group

May 2023

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Why Electrical Safety is Essential in Construction

Trainee scaffolder died when scaffold tube came into contact with overhead line

A trainee scaffolder received a fatal electric shock whilst handling a 6.4 metre long scaffold tube that came into contact with an 11,000 Volt overhead power line. No site specific risk assessment had been done, only generic ones at the office.

Action

The company employing the worker was prosecuted under the Health and Safety at Work etc Act Section 2(1), and fined.

Comment

- The company should have closely supervised the trainee until he was able to demonstrate competence in a wide range of work situations.
- The company should have undertaken a risk assessment for that site and told all workers of the results of the risk assessment.
- Action should have been taken to reduce the risks from contact with overhead power lines. This could have included requesting that the electricity distributor made the overhead power line dead during the work.

Electrical Safety in Construction

- Electrical Safety in Buildings
 - Refurbishment work in buildings
- Overhead Power Lines
 - Proximity can be as dangerous as contact
- Underground Cables
 - Regionally the biggest electricity-related incidents in construction

Electrical Safety in Buildings

- Managing Electrical Safety During Refurbishment Work
 - Understand the system
 - Isolations
 - Portable electrical equipment
 - Cordless tools, 110v transformers, regular inspection of equipment
 - Residual current devices (RCD or Trip)
 - Lighting systems and damaged bulbs

Electrical Safety in Buildings

Contractor sustains electric shock after failure to isolate power supply

A self-employed contractor sustained 415 volt electric shock injuries from the bare electrical wires supplying an overhead travelling crane whilst working from a 'cherry picker' installing computer cabling. The defendant company failed to follow their procedures for safe isolation of the power supply to the crane.

Action

The company was prosecuted under the Health and Safety At Work etc. Act 1974, Section 3, Sub Section 1 and The Management of Health and Safety at Work Regulations 1992 (No 4) paragraph 1 due to the high risk of serious or fatal injuries from the energised electrical wires. This resulted in a £15,000 fine.

Comment

- The company should have undertaken a risk assessment of the cabling activity that should have identified the hazard from the electrical wires.
- The company should have taken action to warn the contractor of the presence of electrical wires near where the work was being carried out.
- The company should have taken steps to only allow work when the electrical power had been turned off and to ensure that power remained off for the duration of the work.

Overhead Power Lines



Planning and
Preparation

Eliminating the
Danger

- Avoid, divert, isolate

Control the Access

Control the Work

- Clearance, exclusion, modifications, additions, supervision



**Car Park
&
Reception**
↑



CCTV
These premises
are protected
by
CCTV







Underground Cables

Planning and Preparation

Using Cable Plans

Cable Locating Devices

Safe Digging Practices



What Does the Law Say

- The Health and Safety at Work etc Act 1974
- The Electricity at Work Regulations 1989
- The Management of Health and Safety at Work Regulations 1999
- The Provision and Use of Work Equipment Regulations 1998

- [Accident case studies - Electrical safety \(hse.gov.uk\)](https://www.hse.gov.uk/accidentcase/accidentcase-electricalsafety.htm)

What Advice and Guidance Exists

- [Electrical safety – HSE](#)
- [Work near electricity - Electrical safety \(hse.gov.uk\)](#)
- [The Electricity at Work Regulations 1989 - HSR25 \(hse.gov.uk\)](#)
- [Construction - Electrical safety - Industry health & safety \(hse.gov.uk\)](#)
- [Electrical safety and you: A brief guide \(hse.gov.uk\)](#)
- [Electricity at work: Safe working practices \(hse.gov.uk\)](#)
- [Health and safety in construction \(HSG150\) \(hse.gov.uk\)](#)
- [Avoiding concealed services and overhead power lines \(hse.gov.uk\)](#)
- [Electrical test equipment for use on low voltage electrical systems \(hse.gov.uk\)](#)
- [Avoiding danger from underground services HSG47 \(hse.gov.uk\)](#)

Be Vigilant Out There

[Durham car cleaning firm fined for putting workers at risk of electric shock | HSE Media Centre](#)