# PROMT10
Working safely on electrical equipment in mines

## Overview

This unit is about a mine electrical technician being able to plan and carry out activities involving electrical equipment in a mine using techniques that will avoid danger from electric shock, arcing and burning, and will not constitute a hazard to the mine or others within it.

**This unit has four elements**

1 Safe isolation of electrical equipment
2 Correct use of “permit to work” system
3 Identifying, testing and working on electrical equipment
4 Emergency action in event of electric shock

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## Performance criteria

### Safe isolation of electrical equipment

*You must be able to:*

P1 identify equipment to be worked on and their correct isolation point(s)
P2 communicate effectively with other members of team should unscheduled work arise that may require use of a permit to work
P3 identify whether the isolation will have any effect on the safe operation of the mine and take appropriate action
P4 where practicable ensure that circuit earthing is carried out
P5 ensure that isolation points are locked in a safe position in accordance with company / organisation procedures
P6 post warning notices according to organisational procedures
P7 check relevant safety equipment prior to acceptance/use in accordance with manufacturers' instructions/company procedures
P8 carry out work in accordance with company / organisational requirements
P9 complete records/reports according to legislative requirements and organisational procedures

### Correct use of permit to work system

*You must be able to:*

P10 recognise who is authorised to issue a permit to work
P11 plan the job to minimise danger to those involved
P12 communicate effectively with those involved in the activity
P13 obtain a permit to work in accordance with organisational requirements
P14 ensure relevant equipment is isolated
P15 ensure equipment is locked off/isolated
P16 confirm all works completed and staff/tools accounted for according to organisational procedures
P17 cancel permit according to organisational procedures
P18 restore electrical supply in accordance with company/organisational requirements
P19 complete permit as required by organisational procedures

### Identifying, testing and working on electrical equipment

*You must be able to*

P20 identify/mark/trace cables in accordance with company / organisational procedures
P21 follow organisational procedure when it is not possible to trace a cable
P22 check and ensure all tools/equipment used have organisational approval
P23 carry out tests on electrical equipment in accordance with statutory / organisational requirements
P24 use all test and ancillary equipment in accordance with manufacturers' and organisational instructions
P25 carry out tasks safely and in accordance with organisational procedures
P26 when required, carry out live work safely and in accordance with specific

procedures

P27 take appropriate steps to minimise danger from electrical equipment that is found to be defective

P28 complete records/reports according to legislative requirements and organisational procedures

**Emergency action in event of electric shock**

*You must be able to*

P29 isolate electrical supply to prevent further danger to self, casualty and others

P30 administer first aid in accordance with current approved guidelines for dealing with electric shock / associated injuries

P31 instigate procedures to obtain help

P32 complete relevant records relating to the emergency

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## Working safely on electrical equipment in mines

### Knowledge and understanding

**General**

*You need to know and understand:*

| | |
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| K1 | the isolation procedure(s) to be followed to comply with organisational procedures |
| K2 | the meaning of the terms, “approved lock”, “personal lock”, “authorised”, “scheduled work”, “hierarchy of isolation”, “isolated”, “electrical equipment”, “dead”, “danger notice” and “earthed”, “safe system of work”, “permit to work” |
| K3 | the legal status of a “permit to work”, when a “permit to work is required, the circumstances when a permit may not be required, why a “permit to work” system is used when isolating electricity |
| K4 | organisational procedures for the issue and signing off of “permits to work” |
| K5 | organisational method statements |
| K6 | methods used to identify cables |
| K7 | tests to be carried out on electrical circuits |
| K8 | circumstances when “live work” is permitted and the procedures to be followed when carrying out “live work” |

**Dealing with and electric shock**

*You need to know and understand:*

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| K9 | causes of electric shock in mines |
| K10 | potential injuries associated with electric shock |
| K11 | purpose and use of equipment and facilities provided for dealing with electric shock |
| K12 | treatment of casualty who has received an electric shock |
| K13 | organisational and legislative reporting requirements should an electric shock emergency occur |
| K14 | procedures to be followed to communicate details of the electric shock emergency |

***Mine environments***

*You need to know and understand:*

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| K15 | the main principles of health and safety and environmental legislation and regulations relevant to using electricity in mines |
| K16 | industrial Standards relevant to using electricity in mines |
| K17 | approved codes of practice and guidance for working safely with electricity in mines |
| K18 | the different types and categories of hazards and hazardous situations in mines in general, and in your area of responsibility in particular |
| K19 | organisational and legislative requirements for inspections, examinations and testing |
| K20 | methods of communication in hazardous or emergency situations |

**Equipment and tools**

*You need to know and understand:*

| | |
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| K21 | types, use and maintenance requirements of personal protective equipment provided to protect from electric shock |
| K22 | legislation, approved codes of practice and guidelines for safe use of equipment |
| K23 | the use of equipment/tools provided in accordance with manufacturers' instructions |
| K24 | organisational procedures for the isolation of plant and machinery |

**Working with others**

*You need to know and understand:*

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| K25 | your own responsibilities and limitations |
| K26 | methods of effective communication |
| K27 | the allocation of tasks and duties |
| K28 | the benefits of team work, and how to achieve it |

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