

Domain**ELECTRICAL POWER LINES INSTALLATION****Title:****Perform manual excavations****Level: 2****Credits: 4****Purpose**

This unit standard is intended for those who perform manual excavations. People credited with this unit standard are able to plan and prepare for work; mark out excavation site; conduct excavation work; and clean-up work area.

This unit standard is intended for those who work as electrical lineman.

Special Notes

1. Entry information:

Prerequisite

- *Unit 1157 - Demonstrate basic knowledge of workplace health and safety*

2. This unit standard is to be delivered and assessed in the context of electrical lines installation and should be assessed in conjunction with other relevant technical units selected from this domain.

3. To demonstrate competence, at a minimum, evidence is required of the marking out and carrying excavation work. Performing these tasks requires correct identification of requirements, selection and use of appropriate processes, tools and equipment and completing all work to specification.

4. Assessment evidence may be collected from a real workplace or a simulated workplace environment in which electrical operations are carried out.

5. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' and company guidelines, instructions, and reasonable flat rate time.

6. Glossary of terms:

- '*isolation and lockout procedures*' refer to isolating an electrical circuit from the source of supply
- '*specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements, national and international standards and legislations
- '*ISO*' refers to International Organization for Standards
- '*SANS*' refers South African National Standards.

7. Regulations and legislation relevant to this unit standard include the following:

- Labour Act No. 11 of 2007
- Petroleum Products and Energy Amendment Act No. 2 of 2005

- National Energy Fund Act of 2000
- Gas Act (Draft 2b)
- Regulations relating to the health & safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007
- ISO 14001 (Environmental Management Standard)
- Electricity Act No.4 of 2007
- SANS 10142-1 and SANS 10142-2 electrical wiring codes and all subsequent amendments to any of the above.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on www.namqa.org and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for work

Performance criteria

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and interpreted.
- 1.2 Signage and barricade requirements are identified and implemented, where necessary.
- 1.3 Personal protective equipment is selected in line with job and safety requirements
- 1.4 Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability, and any faults are rectified or reported prior to commencement.
- 1.5 Material quantity requirements are calculated in line with plans, specifications and quality requirements.
- 1.6 Environmental protection requirements are identified and applied in line with environmental plans and regulatory obligations.

Element 2: Mark out excavation site

Range

Setting out may include but is not limited to identification of services which can be damaged or impede excavation and marking out of the project.

Excavation may include but is not limited to excavating in gravel, sand, clay, shale and rock ground, wet ground, dry ground or loose. Evidence of excavation of two types of ground is required for assessment purposes.

Performance Criteria

- 2.1 Excavation route is located, and line and depth established from site plans and instructions.
- 2.2 Site pegs and profiles are used to identify service markers and to set out service points.
- 2.3 Excavation limits are marked.
- 2.4 Safety signs and barricades appropriate to the project are erected in positions as required by site safety plan.
- 2.5 Temporary drainage system is established to divert surface and sub-surface water from excavation.
- 2.6 Service markers and taped areas are identified and damage or interference with underground services avoided.

Element 3: Conduct excavation work

Range

Trench and excavation support may include sheet material, shoring (timber, metal or piling).

Performance Criteria

- 3.1 Excavations are dug with hand tools to ensure correct route and depth.
- 3.2 Safety procedures are followed to minimise risk to self and others.
- 3.3 Excavation is cleaned and equipment freed from dirt with hand tools according to workplace procedures.

Element 4: Clean-up work area

Performance Criteria

- 4.1 Work area is cleared, cleaned, restored and secured in line with workplace procedures.
- 4.2 Tools and equipment are cleaned, checked and stored in line with manufacturer specifications and workplace procedures.

- 4.3 Materials and wastes are disposed of, reused, or recycled in accordance with legislation, regulations, codes of practice and job specifications.

Registration Data

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