Unit ID: 2510

Domain ELECTRICAL INSTALLATION

Title: Design electrical installation

Level: 4 Credits: 4

<u>Purpose</u>

This unit standard is intended for those who design electrical installation. People credited with these unit standards are able to plan and prepare for work; design electrical installation; and clean-up work area.

This unit standard is intended for those who work as electricians.

Special Notes

1. Entry information:

Prerequisite

- None
- 2. This unit standard is to be delivered and assessed in the context of electrical 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 correct interpretation of electrical signs and symbols, drawing cable routes and positioning electrical distribution boards and panels at logical locations.
- 4. Assessment evidence may be collected from a real workplace or a simulated workplace environment in which electrical operations are carried out.
- 5. 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 to South African National Standards
- 6. 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 and all subsequent amendments.

- 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.namga.org and the Namibia Training Authority on www.namga.org and <a href="ht

Elements and Performance Criteria

Element 1: Plan and prepare for work

Performance Criteria

- 1.1 Work instructions, including plans, specifications, job cards, quality requirements and operational details are obtained, confirmed and interpreted.
- 1.2 Safety requirements are followed in line with safety plans and policies.
- 1.3 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.
- 1.4 Material quantity requirements are calculated in line with plans, specifications and quality requirements.

Element 2: Design electrical installation

Performance Criteria

- 2.1 Main distribution board and sub-distribution board sizes are calculated in line with the job requirements.
- 2.2 Maximum load current for an installation is calculated.
- 2.3 Main distribution board, sub-distribution boards and distribution panels are selected according to organisational procedures.
- 2.4 Main distribution board, sub-distribution boards and distribution panels are positioned at logical locations according to the task and organisational procedures.

- 2.5 Cable enclosures carry the recommended cables according to manufacturers' specifications.
- 2.6 Control units, socket outlets and switches are positioned at logical locations according to task and organisational procedures.

Element 3: Clean-up work area

Performance Criteria

- 3.1 Work area is cleared, cleaned, restored and secured in line with workplace procedures.
- 3.2 Tools and equipment are cleaned, checked and stored in line with manufacturer specifications and workplace procedures.
- 3.3 Materials and wastes are disposed of, reused, or recycled in accordance with legislation, regulations, codes of practice and job specifications.

Registration Data

Subfield:	Electrical Engineering
Date first registered:	23 November 2023
Date this version registered:	23 November 2023
Anticipated review:	23 November 2028
Body responsible for review:	Namibia Training Authority