

**Unit ID: 879**

**Domain**

**ELECTROTECHNOLOGY**

**Title:**

**Perform basic installation and testing of wiring for single phase domestic and industrial electrical circuits**

**Level: 2**

**Credits: 4**

### **Purpose**

This unit standard specifies the competencies required to install and test wiring of domestic and industrial electrical circuits. It includes plan to install and test I circuits, preparation to install and test circuits, wiring and testing circuits and complete the installing and testing of domestic and industrial circuits. This unit standard is intended for those who work in electrotechnology environment.

### **Special Notes**

1. Entry information:  
  
Prerequisite
  - Unit 864 – *Apply safety rules and regulations in an electrotechnology environment* or demonstrated equivalent knowledge and skills.
2. Competency under this unit standard does not entitle the candidate to perform prescribed electrical work without the supervision of a supervisor of electrical work, until the candidate has been registered and licensed.
3. Performance of all elements in this unit standard must comply with industry standards.
4. Assessment evidence may be collected from a real workplace or an appropriate simulated realistic environment in which electrotechnology operations are carried out.
5. Domestic and industrial (commercial) circuits and associated accessories may include but are not limited to distribution board, light switches, socket outlets, light fittings, geyser and stove point, isolators and circuit protection devices, lighting circuits, socket outlet circuits, stove circuit, geyser circuit and bell circuit.
6. Circuits limited to single phase.
7. Glossary of terms:
  - *'Current regulations and standards'* refer to the requirements of the above legislation and standards, applied to the context in which the term is used.
  - *'Industry practice'* refers to those practices which competent practitioners within the industry recognize as current industry best practice.
  - *'electrical circuits'* refer to both domestic and commercial/industrial circuits
  - *'SANS'* refers to South Africa National Standards
8. Regulations and legislation relevant to this unit standard include the following:

- Labour Act, No. 11, 2007.
- Occupational Health and Safety Regulations No. 18, 1997 and all subsequent amendments.
- Electricity Act 1992,
- Electricity Regulations 1997,
- Health and Safety in Employment Act 1992, and associated regulations;
- SANS 10142-1.
- SANS 10142-2

### **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 and the Namibia Training Authority on [www.nta.com.na](http://www.nta.com.na).

### **Elements and Performance Criteria**

#### **Element 1: Plan to install and test electrical circuits.**

##### **Performance Criteria**

- 1.1 Job instruction is interpreted and a sequence of operation is determined.
- 1.2 Applicable electrical drawings are correctly interpreted and selected to meet job requirements.
- 1.3 Equipment including personal protective equipment are selected, inspected and checked for functionality and safety prior to commencement.
- 1.4 Safety procedures related to job requirements and work site procedures are obtained.
- 1.5 Appropriate tools are identified and selected to meet the requirements of the task according to statutory requirements.

#### **Element 2: Prepare to install and test electrical circuits.**

##### **Performance Criteria**

- 2.1 Wire ways are identified and checked to be ready for the installation of wires, conductors and cables.
- 2.2 Work site is inspected for safety and hazards and corrective action is taken according to statutory requirements.
- 2.3 Wire way installation is checked for the placing and mounting of termination boxes, end products and various obstacles so as to take necessary corrective action or processes when wiring the circuit.

### **Element 3: Wire electrical circuits.**

#### **Performance Criteria**

- 3.1 Appropriate tools are selected and used correctly as per manufacturer's specifications and work site standards.
- 3.2 Draw wire is inserted into wire way in preparation for pulling through of wires into wire ways or through around obstacles.
- 3.3 Circuits are wired separately into wire ways depending on the circuit requirements to comply with industry standards.
- 3.4 Maximum amounts of wires per size of wire ways and type of circuit is adhered to as per industry standards.
- 3.5 Correct colour coded wires are used in wire ways as per standards and job requirements.
- 3.6 All connections are verified to be correct, tight and are at required slack as per job requirements and industry standards.

### **Element 4: Test electrical circuits.**

#### **Performance Criteria**

- 4.1 Distribution board is inspected, checked and tested to ensure that protection devices, wiring and connections are correct and operational.
- 4.2 All inspection boxes and terminations are inspected and checked to be correct before circuit is energized (commissioned).
- 4.3 Tests are conducted on circuits for requirements and energizing to ensure compliance with work site procedures, standards and safety regulations.
- 4.4 Different circuits are energized individually to ensure that it is correct.
- 4.5 Tests are conducted on specific circuits to ensure that earth leakage protection is operational within the stipulated rating.

### **Element 5: Complete the installing and testing of electrical circuits.**

#### **Performance Criteria**

- 5.1 Electrical installations are labelled as per industry standards.
- 5.2 All connections are tight to ensure electrical safety.
- 5.3 Test readings are recorded using appropriate documentation and forms as specified in work site procedures.
- 5.4 The work area is cleaned and waste disposed off.
- 5.5 Work area is restored to serviceable condition according to statutory requirements.

- 5.6 Appropriate tools are cared for and stored according to work site requirements.
- 5.7 Documentation and drawings are updated and returned to source according to statutory requirements.

**Registration Data**

<b>Subfield:</b>	Electrical Engineering
<b>Date first registered:</b>	18 November 2010
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<b>Body responsible for review:</b>	Namibia Training Authority