

Domain

Title:

Level: 1

SOLAR INSTALLATION
Demonstrate basic knowledge of
electricity

Unit ID: 1642

Credits: 2

Purpose

This unit standard specifies the competencies required to demonstrate basic knowledge of electricity. It includes the following elements: Describe the structure of an atom; Describe basic electrical quantities and units of measurements. This unit standard is intended for those who work in a solar energy installation environment.

Special Notes

1. Entry information:

Prerequisite:

- *1641: Apply safety rules and regulations in a solar energy installation environment* or demonstrated equivalent knowledge and skills.
2. This unit standard is to be delivered and assessed in the context of solar system operations and should be assessed in conjunction with other relevant technical unit standards selected from this domain.
 3. To demonstrate competence at minimum, evidence is required of correctly identifying requirements, finishing of the tasks, correctly selecting and using appropriate processes, tools and equipment and completing all work to specification.
 4. Assessment evidence may be collected at a real workplace or a simulated real workplace or an appropriate simulated realistic environment in which solar system operations are carried out.
 5. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' and companies' guidelines and instructions.
 6. '*Specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements.
 7. Regulations and legislation relevant to this unit standard include the following:
 - Labour Amendment Act, 2012 (Act No. 2 of 2012)
 - SANS 10142-1 and SANS 10142-2 electrical wiring codes
 - IEC 60061.
 - IEC 61360.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: Describe the structure of an atom

Range:

The description of the atomic structure is meant to allow the explanation of the nature of electricity.

Performance Criteria

- 1.1 Atomic structures are explained.
- 1.2 Conductors and current flow are explained.

Element 2: Describe basic electrical quantities and units of measurements

Range:

The description of the basic electrical quantities and units of measurements include, but is not restricted to, assigning correct units to voltage, current, resistance, power and energy and knowledge of their interdependence.

Performance Criteria

- 2.1 Ohm`s law is defined.
- 2.2 Voltage and Volt are defined.
- 2.3 Power and Watts are defined.
- 2.4 Energy and Joules are defined.
- 2.5 Resistance and Ohms are defined.
- 2.6 Current and Ampere are defined.

Registration Data

Subfield:	Electrical Engineering
Date first registered:	28 March 2018
Date this version registered:	28 March 2018
Anticipated review:	2023
Body responsible for review:	Namibia Training Authority