

Domain

Title:

Level: 1

Unit ID: 1650

SOLAR INSTALLATION
**Use and maintain electrical and
mechanical tools for solar equipment
installations**

Credits: 3

Purpose

This unit standard specifies the competencies required to use and maintain electrical and mechanical tools for solar installations. It includes the following elements: plan and prepare for work, obtain basic measurements, use electrical and mechanical tools and maintain electrical and mechanical tools. 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. To demonstrate competence, at a minimum, evidence is required of the tasks in safe use and maintenance of electrical and mechanical tools. These tasks should be performed ensuring correct identification of requirements of the task, correct selection and use of appropriate processes, tools and equipment and completing all work to specification.

3. Assessment evidence may be collected from a real workplace, a simulated real workplace or an appropriate simulated realistic environment in which solar system operations are carried out.

4. Glossary of terms:

- *'Measurement'* means to ascertain the dimensions, quantity or capacity of an object using a measuring device.

5. Performance of all elements in this unit standard must comply with workplace requirements or manufacturers' specifications.

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

- Labour Act, No. 11 of 2007
- Occupational Health and Safety Regulations No. 18, 1997

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

Range:

Planning and preparation may include but is not limited to workplace inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements.

Performance Criteria

- 1.1. Understanding of work instructions, including plans, specifications, quality requirements and operational processes are demonstrated.
- 1.2. Details are estimated, measured, confirmed and applied.
- 1.3. Safety requirements are followed in line with workplace safety plans and policies.
- 1.4. Measuring and calculating equipment selected to carry out tasks are consistent with industry standards.
- 1.5. The requirements of the job are checked for serviceability and any faults are rectified or reported.

Element 2: Obtain basic measurements

Performance Criteria

- 2.1. Method of obtaining the measurement is selected and applied.
- 2.2. Measurements are obtained, accurate to 1 mm, using a ruler or tape.
- 2.3. Measurements are confirmed and recorded.

Element 3: Demonstrate use of electrical and mechanical tools

Range

Electrical tools include but are not limited to flat and Phillips screw drivers, pliers, long nose pliers, side cutters, cable knife, stripping pliers, multi-tester. Mechanical tools include but are

not limited to, claw hammers, pinchers, hacksaw, flat files, conduit benders, stocks and dies, conduit reamers.

Performance Criteria

- 3.1. Electrical tools are identified and their use explained.
- 3.2. Mechanical tools are identified and their use explained.
- 3.3. Correct use of electrical tools is demonstrated according to workplace procedures.
- 3.4. Correct use of mechanical tools is demonstrated according to workplace procedures.

Element 4: Maintain electrical and mechanical tools

Performance Criteria

- 4.1 Electrical tools are cleaned and stored in designated storage places.
- 4.2 Mechanical tools are lubricated with manufacturer's recommended lubricants.
- 4.3 Cutting tools are sharpened according to workplace procedures.
- 4.4 Mechanical tools are cleaned and stored in designated storage places.

Registration Data

Subfield:	Electrical Engineering
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