	Unit ID: 2499
Domain	**ELECTRICAL ENGINEERING - CORE**
Title:	**Prevent electrostatic damage to electrical components**
Level: 2	**Credits: 2**

Purpose

This unit standard is intended for those who prevent electrostatic damage to electrical components. People credited with this unit standard are able to describe the causes and effects of static electricity in the electrical workplace; describe precautions to minimize electrostatic discharge; and demonstrate the use of anti-static precautions.

This unit standard is intended for those who work in electrical workplace environment.

Special Notes

1. Entry information:

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

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

3. This unit standard can be co-assessed with other relevant technical unit standard(s) for example '*Perform basic soldering and de-soldering procedures for electrical works*', which enables the collection of evidence required in this unit standard.

4. Performance of all elements in this unit standard must comply with all relevant workplace requirements and/or manufacturers' specifications.

5. Regulations and legislation relevant to this unit standard include the following:
   - Labour Act No. 11, 2007.
   - 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.

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. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Describe the causes and effects of static electricity in the electrical workplace

Range

Common factors that lead to static electricity generation may include but are not limited to poor air conditioning, low humidity, choice of carpet, clothing, aerosol spray and solder suckers.

Performance Criteria

1.1 Generation of a static charge is explained in terms of separation of electrons.

1.2 Factors contributing to the generation of static electricity in the workplace are identified.

1.3 Practical mechanism by which the damage to components occurs, and how the damage can be prevented, are described.

1.4 The effect of damage to components and devices is described.

1.5 The possibility of the presence of significant charge without the person being aware of it is described.

Element 2: Describe precautions to minimize electrostatic discharge

Performance Criteria

2.1 Basic rules for handling of components and printed circuit boards are explained.

2.2 Selection of clothing, furnishings, floor coverings, and use of antistatic sprays to reduce electrostatic generation are explained.

2.3 Use of ionizing air blowers is described with respect to worst case conditions.

2.4 Static safe work station is described according to the minimum requirements.

2.5 Precautions for use in temporary work situations are described.

Element 3: Demonstrate the use of anti-static precautions

Range

Workstation may include but not limited to workbench, racks, and cabinets being worked upon.

Performance Criteria

3.1 Basic rules for handling of components and printed circuit boards are applied.

3.2 Anti-static mats are placed on the workstation in accordance with the static safety requirements.

3.3 Anti-static mats are connected together, and to an earth connector, with a resistance value of less than 1 Ω to ground.

3.4 Approved anti-static wrist or ankle straps, connected through a resistance lead of 1 Ω to an earthed mat, are worn when handling components and printed circuit boards.

3.5 Components and printed circuit boards are transported and stored in an approved anti-static containers or bags.

3.6 Tools with approved electrostatic conducting handles are used.

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