

Domain**AIR CONDITIONING AND
REFRIGERATION****Title:****Analyse faults in printed circuit board in
air conditioners****Level: 4****Credits: 6****Purpose**

This unit standard specifies the competencies required to analyse faults in printed circuit board in air conditioners. It includes testing faults in Air conditioning PC board and replacing and repairing Air conditioning PC board .This unit standard is intended for those who work as air conditioning and refrigeration mechanics.

Special Notes

1. Entry information:

Prerequisite

- Unit 567 - *Apply health and safety routines in an air conditioning and refrigeration workplace* or demonstrated equivalent knowledge and skills.

2. Assessment evidence may be collected from a real workplace or a simulated real workplace or an appropriate simulated realistic environment in which air conditioning and refrigeration operations are carried out.
3. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' specifications and/or company's guidelines and instructions.
4. Glossary of terms:
 - 'A/C' refers to air conditioning unit or air conditioner.
 - '*specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements.
 - '*PC*' refers to printed circuit board in air conditioners.
5. 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.
6. Performance of all elements in this unit standard must comply with industry standards.
7. This unit standard applies to single-phase and three-phase air conditioning and refrigeration systems.

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: Plan and prepare for work.

Range

Tool and equipment may include but are not limited to soldering iron, multimeter, solder sucker,

Performance Criteria

- 1.1 Work instructions, including job cards, specifications and operational details are obtained, confirmed and applied.
- 1.2 Workplace inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements is carried out.
- 1.3 Safety requirements are followed in line with safety plans and policies.
- 1.4 Equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults rectified or reported prior to commencement.
- 1.5 Material requirements are identified and obtained in line with job card and/or specifications.
- 1.6 Materials are safely handled and located ready for use in line with workplace procedures.
- 1.7 Technical and/or calibration requirements for tools and equipment are sourced and implemented in line with workplace procedures.
- 1.8 Environmental protection requirements are identified and applied in line with environmental plans and regulatory obligations.

Element 2: Test faults in Air conditioning PC boards.

Performance Criteria

- 2.1 Visual inspections are carried out to identify cracks and burns.
- 2.2 Test is carried out to check for open circuit and short circuits.
- 2.3 Fault(s) are identified and reported to appropriate personnel in line with workplace procedures.

Element 3: Repair Air conditioning PC boards.

Range

Repair methods may include but are not limited to soft soldering.

Performance Criteria

- 3.1 Procedures and information required for repairing and replacing Air conditioning PC boards are identified and sourced in line with workplace procedures.
- 3.2 The PC is isolated from power source.
- 3.3 Faulty components are removed and replaced.
- 3.4 Test-run is carried out.
- 3.5 Appliance is re-assembled in line with workplace procedures.

Element 4: Complete work and clean up.

Range

Work completion details may include but are not limited to job card and sign-out form for equipment.

Performance Criteria

- 4.1 Work is completed and appropriate personnel notified in line with workplace procedures.
- 4.2 Reusable, faulty or worn components are tagged and dispatched for repair to maintain adequate spares inventory.
- 4.3 Work area is cleared of waste, cleaned, restored and secured in line with workplace procedures.
- 4.4 Maintenance work activities are documented in line with workplace procedures.
- 4.6 Equipment used is cleaned, checked, maintained and stored in line with workplace procedures.

4.7 Work completion details are finalised in line with workplace procedures.

Registration Data

Subfield:	Mechanical Engineering
Date first registered:	27 May 2010
Date this version registered:	27 May 2010
Anticipated review:	2014
Body responsible for review:	Namibia Training Authority