

**Unit ID: 586**

**Domain**

**AIR CONDITIONING AND  
REFRIGERATION**

**Title:**

**Install pipe work for air conditioning and  
refrigeration systems**

**Level: 2**

**Credits: 8**

**Purpose**

This unit standard specifies the competencies required to install pipe work for air conditioning and refrigeration systems. 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:

- 'specifications' refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements
- 'install pipe work' refers to the installations of pre-fabricated flexible and non-flexible pipes.

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](http://www.nta.com.na).

## **Elements and Performance Criteria**

### **Element 1: Plan and prepare for work.**

#### **Range**

Tools and equipment may include but are not limited to standard tool box, oxy-acetylene gas welding set, drilling machine and swaging and flaring tool set, square, spirit level, spring bender, lever type bender, hack saw, blade , tube cutter file ,measuring tape and reamer.

Materials may include but are not limited to drain pipe, fisher plugs, screws, bolts and nuts, washers, tubes, armour flux, cable ties, soldering rods, trunking, couplings, elbow saddle, polyvinyl chloride (PVC) glue, insulation tape, mounting bracket and solder flux.

#### **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 Tools and 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.

## **Element 2: Install pipe work.**

### **Performance Criteria**

- 2.1 Pipe work installation is appropriately sequenced in line with job schedule.
- 2.2 Pipe work routes are planned within the constraints of the building structure, specification and regulations.
- 2.3 Pipe work installation is carried out to comply with technical standards and job specifications with sufficient access to affect connections and maintenance.
- 2.4 Accessories are installed straight and square in the required locations and within acceptable tolerances and in line with manufacturers' specifications and workplace procedures.
- 2.5 Final check of the installed pipe work is made to verify that it complies with all requirements.

## **Element 3: Complete work and clean up.**

### **Range**

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

### **Performance Criteria**

- 3.1 Work is completed and appropriate personnel notified in line with workplace procedures.
- 3.2 Work area is cleared of waste, cleaned, restored and secured in line with workplace procedures.
- 3.3 Reusable material is collected and stored in line with workplace procedures.
- 3.4 Equipment used is cleaned, checked, maintained and stored in line with workplace procedures.
- 3.5 Work completion details are finalised in line with workplace procedures.

## **Registration Data**

<b>Subfield:</b>	Mechanical Engineering
<b>Date first registered:</b>	27 May 2010
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<b>Body responsible for review:</b>	Namibia Training Authority